



**CITY OF MORRO BAY
WATER RECLAMATION FACILITY
CITIZEN ADVISORY COMMITTEE (WRFCAC)
AGENDA**

The City of Morro Bay is dedicated to the preservation and enhancement of the quality of life. The City shall be committed to this purpose and will provide a level of municipal service and safety consistent with and responsive to the needs of the public.

**Wednesday, November 5, 2014
Fire Station Conference Room - 3:00 P.M.
715 Harbor Street, Morro Bay, CA**

Barbara Spagnola

Bill Woodson

Dale Guerra

John Diodati

Mary (Ginny) Garelick

Paul Donnelly

Valerie Levulett

Planning Commissioner:
Richard Sadowski

Public Works Advisory Board
Member: Steven Shively

ESTABLISH QUORUM AND CALL TO ORDER
MOMENT OF SILENCE/PLEDGE OF ALLEGIANCE
ANNOUNCEMENTS/PRESENTATIONS

PUBLIC COMMENT PERIOD

Members of the audience wishing to address the Board on City business matters other than scheduled items may do so at this time. To increase the effectiveness of the Public Comment Period, the following rules shall be followed:

- When recognized by the Chair, please come forward to the podium and state your name and address for the record. Board meetings are audio and video recorded and this information is voluntary and desired for the preparation of minutes.
- Comments are to be limited to three minutes.
- All remarks shall be addressed to the Board, as a whole, and not to any individual member thereof.
- The Board respectfully requests that you refrain from making slanderous, profane or personal remarks against any elected official, commission and/or staff.
- Please refrain from public displays or outbursts such as unsolicited applause, comments or cheering.
- Any disruptive activities that substantially interfere with the ability of the Board to carry out its meeting will not be permitted and offenders will be requested to leave the meeting.
- Your participation in Board meetings is welcome and your courtesy will be appreciated.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Public Services Department at (805) 772-6264. Notification 24 hours prior to the meeting will enable the City to make reasonable arrangements to ensure accessibility to this meeting.

A. CONSENT CALENDAR

A-1 Approval of minutes from the Water Reclamation Facility Citizen Advisory Committee meeting of October 22, 2014

Staff Recommendation: Approve minutes as submitted.

B. OLD BUSINESS

B-1 WRFCAC Sub-Committee Updates - No Staff Report

Recommendation: Receive updates.

C. NEW BUSINESS

C-1 Presentation by Committee Member Woodson, "Morro Bay Water" - Exhibit

C-2 Presentation of City of Morro Bay New Water Reclamation Facility Project Comparative Site Analysis: Regional CMC Facility vs. Rancho Colina *(Due to unavailability of the completed CMC WWTP Analysis by Carollo Engineers, the report is incomplete at this time)*

(Staff Report and attachments will be available on website and via email by 5:00 p.m. 11/3/2014)

Recommendation: Provide comments or recommendations that will be forwarded to City Council for their consideration for final site selection.

D. COMMITTEE MEMBER CLOSING COMMENTS

E. ADJOURNMENT

Adjourn to the Water Reclamation Facility Citizen Advisory Committee meeting at the **Community Center Multipurpose Room, 1001 Kennedy Way**, on December 10, 2014, at 3:00 p.m.

This agenda is subject to amendment up to 72 hours prior to the date and time set for the meeting. Please refer to the agenda posted at the Public Services Department, 955 Shasta Avenue, for any revisions or call the department at 772-6264 for further information.

Materials related to an item on this Agenda are available for public inspection during normal business hours in the Public Services Department, at Mill's/ASAP, 495 Morro Bay Boulevard, or the Morro Bay Library, 695 Harbor, Morro Bay, CA 93442, or online at www.morro-bay.ca.us/wrfcac. Materials related to an item on this Agenda submitted to the Committee after publication of the Agenda packet are available for inspection at the Public Services Department during normal business hours or at the scheduled meeting.

CITY OF MORRO BAY
WATER RECLAMATION FACILITY
CITIZEN ADVISORY COMMITTEE (WRFCAC)

SYNOPSIS MINUTES

Regular Meeting – October 22, 2014

PRESENT:	John Diodati	Mary (Ginny) Garelick
	Barbara Spagnola	Dale Guerra
	Valerie Levulett	Paul Donnelly
	Bill Woodson	Steven Shively
	Richard Sadowski	
STAFF:	Rob Livick	Public Services Director
	Bruce Keogh	Wastewater Treatment Manager
	Rick Sauerwein	Capitol Projects Manager
	Kay Merrill	Administrative Utilities Technician
	Jarrold Whelan	Assistant Engineer

CONSULTANTS: John Rickenbach and Mike Nunley

ESTABLISH QUORUM AND CALL TO ORDER

John Diodati called the meeting to order at 3:01pm. Rob Livick stated all Committee Members are present and John Diodati asked for a moment of silence before leading the Pledge of Allegiance.

Rob Livick requested a modification to the Agenda. Instead of the Rancho Colina Site tour being at the beginning of the meeting, the tour will be at the end of the meeting and will recess to the site. The Committee was in consensus to make the change.

Richard Sadowski announced the Finance Committee had a meeting with Monica Reid, from Kestrel Consulting, and stated the last WRFCAC meeting was not shown in its entirety on the DVD and he would like it corrected.

John Diodati Receive and File.

PUBLIC COMMENT

John Diodati opened Public Comment period, seeing none, closed Public Comment.

A. CONSENT CALENDAR

A-1 MINUTES OF OCTOBER 8, 2014 WRFCAC MEETING

MOTION: Steven Shively moved to approve the minutes. Dale Guerra seconded the motion and the motion passed unanimously. (9-0).

B. OLD BUSINESS

B-1 WRFCAC SUB-COMMITTEE UPDATES

Mary Garelick stated the Finance Committee met with Monica Reid from Kestrel Consulting. There was discussion regarding grants, preparation of draft resolutions for City Council, and financial documentation to back the grant application. She stated that grants are difficult to obtain.

Richard Sadowski stated because of the nitrate problem in Morro Bays wells, the availability to obtain grants is greater.

Barbara Spagnola stated Monica Reid indicated a decision needs to be made on the best overall project and grants do not drive the project, they assist in the funding and finance of loans for the project.

John Diodati suggested that the Finance Committee define how this project is innovative and can be competitive when the time comes to apply for grants.

There were no other Sub-Committee updates.

John Diodati opened Public Comment period, seeing none, closed Public Comment.

John Diodati Receive and File.

C. NEW BUSINESS

C-1 Review of Report Regarding Initial Findings on Hydrologic Evaluation of the Potential Benefits to the City Water Supply from Increasing Wastewater Discharge to Either Morro or Chorro Creek by Cleath Harris Associates

Mike Nunley summarized the findings by Cleath Harris Associates and provided an overview of Morro Bay's water supply. There are two reports, one on Chorro Valley and the other on Morro Valley. One of the fundamental differences is the reclaimed water use in the Morro Valley Report (Rancho Colina site) versus the Chorro Valley Report (California Men's Colony/CMC site). CMC discharges to Chorro Creek and the City is limited to when water can be drawn and the amount of water that can be drawn.

Richard Sadowski provided a handout to each member of the Committee and staff regarding Chorro Valley and requested the hand out to be on record.

The Committee, staff and the consultants discussed legal issues, water right issues, and what the City can and cannot do at Chorro Valley.

Rob Livick asked the Committee to forward their questions to him and they will be addressed at the next City Council meeting.

Mike Nunley summarized the report for Morro Valley. A big benefit for the City is Morro Valley can deliver water directly to ag users. With ag users drawing less water, that could impact the City's water supply. Nunley clarified that Cayucos Sanitary District (CSD) was not listed as a partner in the Morro Valley report.

The Committee, staff and the consultants discussed legal issues, water right issues, various types of water storage, water demands if Cayucos is included, water quality and the cost of pumping water to the farmers in Morro Valley.

Mike Nunley stated the water quality requirements are water quality levels that can be achieved at a wastewater treatment plant, especially if you incorporate some level of desalination. At the CMC site, in order to meet its current permit requirements, the City cannot discharge State Water into Chorro Creek. At Morro Valley, the water may be treated at the desalinization plant. Nunley stated the Larry Walker Associates study has summary tables comparing the permit the City would have for discharge to Chorro Creek, discharge to Morro Creek, percolation pond disposal and ocean outfall. Morro Valley has direct re-use for a variety of crops and the City needs to meet the requirements of Title 22 for tertiary, disinfection and wastewater. CMC creek discharge will have more stringent requirements than Morro Creek. The purpose of these two reports is to provide information to City Council on which of the two sites provides the maximum benefit of water.

Rob Livick indicated he has asked the consultants to look at the crop value in the two basins and determine which crops we are trying to maintain.

John Diodati opened Public Comment, and seeing none, closed Public Comment.

John Diodati Receive and File.

COMMITTEE MEMBER CLOSING COMMENTS

Rob Livick clarified this meeting will adjourn from the Rancho Colina site.

Rob Livick stated the e-mail the members received on Assembly Bill 52 was for the members information.

Rob Livick reiterated the hand out Richard Sadowski provided earlier is on record.

Bill Woodson asked has anyone in the City of Morro Bay in an official capacity contacted anyone at CMC concerning their sewer or any plans or any coordination efforts by Morro Bay and CMC for a joint facility. Rob Livick replied yes.

Rob Livick stated this meeting will take a recess and reconvene at the Rancho Colina site.

The Committee, staff and consultants reconvened at approximately 4:30pm and toured the Rancho Colina site.

E. ADJOURNMENT

The meeting adjourned at 5:18pm to the next special WRFCAC meeting at the Fire Station Conference Room, 715 Harbor, on Wednesday November 5, 2014 at 3:00pm.

John Diodati, Chairperson

ATTEST:

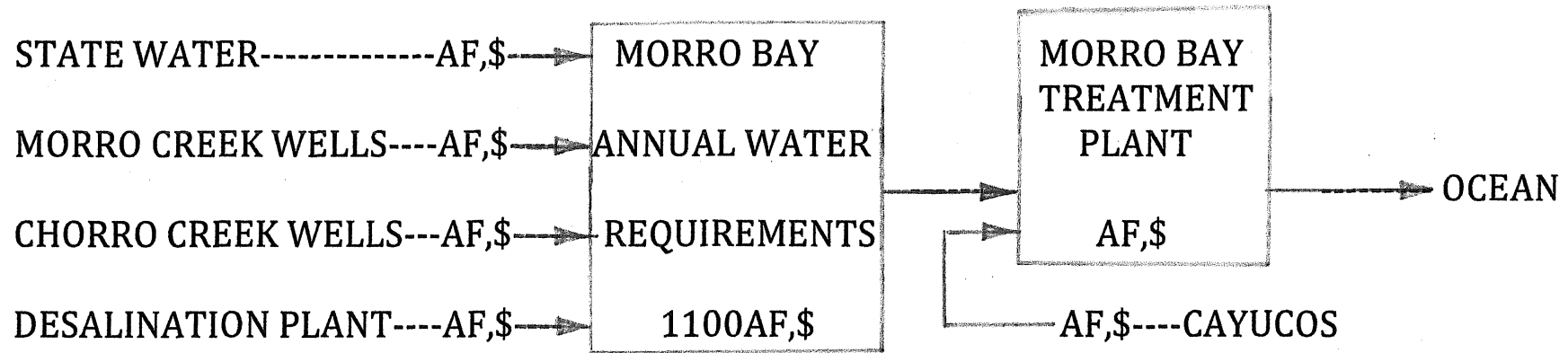
Rob Livick, Secretary

MORRO BAY WATER - 2013

ANNUAL WATER USAGE: ACRE-FEET/YEAR (AF)

ANNUAL WATER COST: \$/YEAR (\$)

AGENDA ITEM: C-1
DATE: November 5, 2014



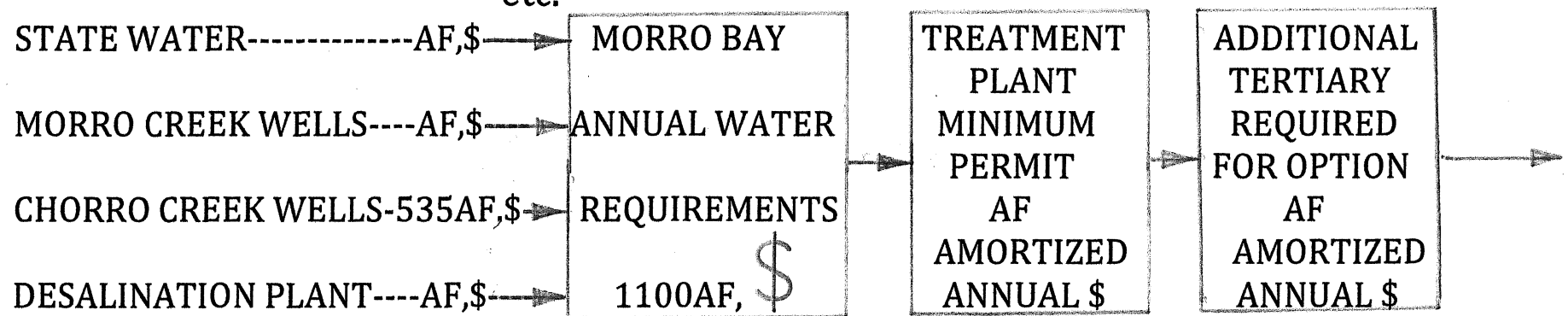
Revision 0, 10/27/14

FUTURE: OPTION 3

CHORRO CREEK RELEASE

Assumptions

1. 1.4 cfs @ Chorro Creek Road
2. \$ amortized @ bond life of 30 years, 3% etc.



Revision 0, 10/27/14

OPTION 1-PURPLE PIPE, OPTION 2-CMC, OPTION 3-CHORRO CREEK RELEASE, OPTION 4- CAYUCOS OR NOT
OPTION 5-CHORRO CREEK WELLS RECHARGE, OPTION 6- MORRO WELLS RECHARGE,
OPTION 7-MORRO CREEK AG, OPTION 8-CHORRO CREEK AG, OPTION 9-?????



AGENDA NO: C-2

MEETING DATE: November 5, 2014

Staff Report

DATE: November 3, 2014

TO: Water Reclamation Facility Citizens Advisory Committee

FROM: Rob Livick, PE/PLS - Public Services Director/City Engineer

SUBJECT: Review of Report Regarding New Water Reclamation Facility Project
Comparative Site Analysis: Regional CMC Facility vs. Rancho Colina
by John F Rickenbach Consulting

RECOMMENDATION

Staff recommends the Water Reclamation Facility Citizens Advisory Committee (WRFCAC) review the report and provide any comments that will be transmitted to City Council that will be addressed in the final report at the November 12, 2014 City Council meeting.

BACKGROUND/DISCUSSION

The attached report from John F Rickenbach (JFR) Consulting is an evaluation of the Regional CMC Facility vs Rancho Colina. Please note that details relating to cost and design are not available but will be available prior to presenting the information to Council on November 12, 2014.

As part of its December 2013 and May 2014 site recommendations, the City Council acknowledged the possible merit of pursuing a regional facility that could serve multiple agencies, citing the potential benefits of sharing the cost of construction, operation and maintenance with partner agencies, **if a suitable working framework could be established**. The attached report from JFR Consulting presents findings which the City's participation in a regional facility would be comparatively preferable to developing a new facility at the Council's previously recommended Rancho Colina site.

The report also draws on information previously developed in support of the City's December 2013 Options Report, which did not analyze a regional facility at CMC, but examined a City only facility at that location. The new report considers the possible benefits of cost sharing among agencies at a regional facility, and compares other key issues, including reclamation potential, possible benefits to the City's water supply, logistical challenges, and permitting considerations.

ATTACHMENTS

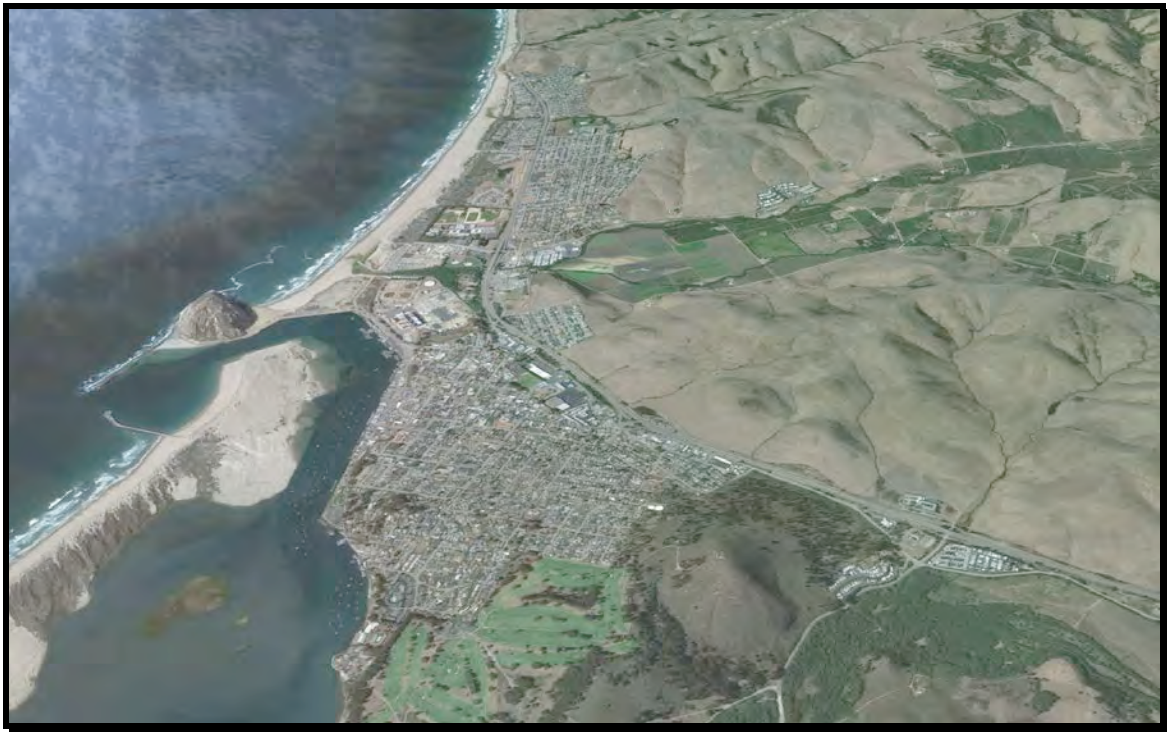
1. Report from JFR dated November 3, 2014.

Prepared by: RL Dept. Review: RL
City Manager Review: _____
City Attorney's Review: _____

New Water Reclamation Facility Project

**Comparative Site Analysis: Regional
CMC Facility vs. Rancho Colina**

Preliminary Draft Report



Submitted to:
City of Morro Bay
Department of Public Services

November 3, 2014



John F. Rickenbach Consulting
7675 Bella Vista Road
Atascadero, California 93422

Comparative Site Analysis: Regional CMC Facility vs. Rancho Colina

Preliminary Draft Report

City of Morro Bay New Water Reclamation Facility Project

Prepared for:

City of Morro Bay
595 Harbor Street
Morro Bay, California 93442

Prepared by:

John F. Rickenbach Consulting
7675 Bella Vista Road
Atascadero, California 93422

In association with:

Michael K. Nunley & Associates

November 3, 2014

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Appendices

- *Appendix A: Letter from San Luis Obispo County to CDCR (October 29, 2013)*
- *Appendix B: Capacity Evaluation of the California Men's Colony Wastewater Treatment Plant (Carollo Engineers, November 2014)*
- *Appendix C: Hydrologic Evaluation of the Potential Benefits to the City Water Supply from Reclaimed Water Use in the Chorro Valley and Morro Valley (Cleath-Harris Geologists, October 2014)*
- *Appendix D: Water Supply Cost Analysis (MKN and Associates)*
- *Appendix E: Regulatory Implications of Discharge for the Future City of Morro Bay Water Reclamation Facility (Larry Walker Associates, September 2014)*
- *Appendix F: Initial Findings on Grants and Strategy (Kestrel Consulting, September 2014)*



City of Morro Bay New Water Reclamation Facility Project Comparative Site Analysis: Regional CMC Facility vs. Rancho Colina

1. Purpose of this Report

As part of its December 2013 and May 2014 site recommendations, the City Council acknowledged the possible merit of pursuing a regional facility that could serve multiple agencies, citing the potential benefits of sharing the cost of construction, operation and maintenance with partner agencies, if a suitable working framework could be established. This report presents the findings of the extent to which the City's participation in a regional facility would be comparatively preferable to developing a new facility at the Council's previously recommended Rancho Colina site. This report draws on several new studies, including the following:

1. *Regulatory Implications of Discharge for the Future City of Morro Bay Water Reclamation Facility* (Larry Walker Associates, September 2014)
2. *Hydrologic Evaluation of the Potential Benefits to the City Water Supply from Reclaimed Water Use in the Chorro Valley and Morro Valley* (Cleath-Harris Geologists, October 2014)
3. *Initial Findings on Grants and Strategy* (Kestrel Consulting, September 2014)
4. *Capacity Evaluation of the California Men's Colony Wastewater Treatment Plant* (Carollo Engineers, November 2014)

This report also draws on information previously developed in support of the City's December 2013 *Options Report*, which did not analyze a regional facility at CMC, but examined a City-only facility at that location. The new report considers the possible benefits of cost-sharing among agencies at a regional facility, and compares other key issues, including reclamation potential, possible benefits to the City's water supply, logistical challenges, and permitting considerations.

2. Executive Summary

This report presents the findings of the extent to which the City's participation in a regional facility at California Men's Colony would be preferable to developing a new facility at the City Council's preferred Rancho Colina site. While both sites are potentially suitable for a new regional WRF, the **Rancho Colina** site is considered better overall. Key considerations in this determination include:

- Long-term benefits of water reuse in Morro Valley exceed those in the Chorro Valley for the following reasons:
 - Siting in the Morro Valley provides an opportunity to optimize reuse of State Water to



restore a severely depleted groundwater basin that already experience agricultural demands that exceed the basin's safe yield (Cleath, 2014);

- The City can likely improve the reliability of its existing appropriated water right and acquire additional water rights based on the reclaimed water used to recharge the basin;
- Once the basin is restored and operated in a sustainable fashion, the City gains the ability to reduce its reliability on State Water and use a less expensive water supply to significantly reduce water costs to rate payers;
- The Rancho Colina site is much closer to both the existing Morro Bay Desalination Plant and the Ocean Outfall, both of which provide vital infrastructure support to direct agricultural and future potable water reuse;
- The Rancho Colina site and City water distribution system are within 2 miles of both the Whale Rock and Chorro Valley Turnout, thereby enabling broader distribution of reclaimed or potable City water throughout San Luis Obispo County. The CMC WWTP is a similar distance from both pipelines, so that site does not have an advantage relative to proximity to major water conveyance facilities.
- Recharge of the Morro Valley aquifer provides three secondary benefits by:
 - Reducing the risk of seawater intrusion into the City well fields (Cleath, 2014)
 - Increased pumping which could remediate existing nitrate contamination in the basin because of the unique hydrogeographic conditions at "the Narrows" (Nitrate Study, Cleath, 2014)
 - Direct or indirect groundwater recharge of the aquifer through either percolation ponds or stream discharge which could potentially enhance aquatic habitat in both Morro and Little Morro Creeks
- The City's 5-Year Goal is not achievable at the CMC site, for the following reasons:
 - Neither CDCR nor the County appear likely to make expansion of the WRF facility at CMC a priority in their 5-year capital improvement program;
 - Pursuit of a regional facility at CMC would require extensive study and multiple state agency approvals, which may take at least a year or longer to even determine feasibility. If the State denies the project concept, the City would need to pursue a different site.
 - A multi-agency framework for operation, maintenance, cost-sharing, and water rights would need to be developed at CMC, which would take considerable time.
- Rancho Colina has highly motivated private property owner, willing to work with the City, and there are no agency-related constraints to transferring ownership or operation to the City, which will save considerable time. Conversely, the CMC site is currently encumbered by an existing State Bond, which could significantly complicate property transfer/acquisition.



- **COST CONCLUSIONS TO BE DETERMINED PENDING COMPLETION OF CAROLLO REPORT**
- The City will have more flexibility at a “greenfield”, or undeveloped, site to pursue innovative treatment approaches, energy-efficient technologies or alternative energy elements such as solar panels, composting, and other City priorities identified during the public workshops in 2013, rather than if they are a partner in the expansion of the existing CMC plant.
- Although a new WRF at CMC could improve the City’s water supply from its wells Chorro Valley wells, the City would also benefit from a WRF in the Morro Valley indirectly by creating an additional water supply that could benefit growers in the Morro Valley and improve the utility of the City’s wells in that valley. In addition, some of the City’s theoretical water supply gain in the Chorro Valley from a CMC site could be offset by minimum streamflow requirements in Chorro Creek, or complications related to achieving water quality goals in that basin.

Table ES-1 summarizes the major findings of the report relative to the key issues and questions included in the analysis:

Table ES-1. Summary of Report Findings		
Key Issue or Question	Major Findings	Better Site
A. What are the unique <i>regional</i> benefits associated with constructing a regional facility at the CMC site instead of a facility at Rancho Colina? How do these relate to the City’s stated goals for the new WRF?	• The CMC’s primary unique regional advantage is that it would combine all key agencies (State, County, Morro Bay, and CSD) into a single facility, thus reducing long-term administrative permitting issues with respect to the RWQCB. This benefit, however, presumes that the substantial administrative challenge of having the State and County lead this effort can be overcome. At the same time, RWQCB staff acknowledged that there would not be any other obvious unique regional benefit with respect to the CMC site. • Rancho Colina’s unique regional benefits have to do with economics, particularly with respect to agriculture. Avocados dominate the Morro Valley, and they are a significant geographic component of this an important regional crop. By making reclaimed water available to Morro valley growers, the potential economic benefit is higher, especially in the context of the current situation, where growers have severely cut back trees due to lack of available water. • There is no locational advantage for either site relative to their proximity to the existing regional water distribution network. However, from a cost standpoint it is more advantageous to locate the WRF closer to the primary wastewater sources (rather than the ultimate water users), and in that respect, Rancho Colina is much better. • Overall, while both sites have good regional potential, the comparative unique regional benefits are better at Rancho Colina, especially when viewed through the lens that developing a workable multi-agency framework and expanded facility at CMC is a remote possibility over the next several years. In contrast, the regional benefits of a new plant at Rancho Colina could likely be realized sooner, while existing regional benefits at CMC (where the State and County are currently served) can continue as is.	Rancho Colina
B. Are there potential cost savings for the City if it participates in a regional facility as	• TBD	TBD



Table ES-1. Summary of Report Findings		
Key Issue or Question	Major Findings	Better Site
compared to Rancho Colina? How will the construction and operation of ancillary facilities the City would need (such as a raw sewage conveyance pipeline from CMC to the City) affect the cost to the City? How do the capital costs compare, as well as the lifecycle costs, of both alternatives?		
C. Are there unique water supply benefits for the City associated with the CMC site as compared to Rancho Colina? How does the future potential for direct potable reuse factor into this?	- Overall, both sites have a similar level of benefit to City water supplies. - The CMC Site presents the highest total benefit (950 AFY) to the City water supply during a drought year. During normal and wet years, over 60% of the City and CSD's treated wastewater would continue to flow to the ocean. - The Rancho Colina Site presents the highest water supply benefit (900 AFY) to the City water supply during normal and wet years. - The Rancho Colina Site with direct agricultural reuse and wet weather disposal through the ocean outfall presents the least effluent permitting challenges. Should the CSD choose to become a customer of the City, there could be an additional 225 AFY available resulting in a total of 1,125 AFY. - If streamflow augmentation at Morro Creek were pursued, the permitting challenges and future regulatory risk would likely be less than those at Chorro Creek according to the Discharge Options report (LWA, 2014). The amount of water supply benefit would be similar to that at the CMC Site.	CMC and Rancho Colina are similar overall, but each has unique considerations
D. What are the water reclamation opportunities for agricultural use from a regional facility at the CMC site, and how do these compare to Rancho Colina?	- In all, it is estimated that about 70% of the irrigated agricultural land in the Morro Valley sits at lower elevation than the Rancho Colina site, or about 700 acres, nearly all of which is within two miles of the City, and even closer than that to the WRF site. This compares to about 545 irrigated acres in the Chorro Valley that stand below the elevation of the CMC site, about 3-4 miles downstream from the CMC site, and about 1.5 to 2 miles upstream from the City. Generally, higher elevation difference between water customers and the reclaimed water supply will result in higher capital and power costs. - In summary, there is about 25% more accessible (lower elevation) irrigated agricultural acreage in the Morro Valley than in the Chorro Valley, and it is generally much closer to both the City limits and the proposed WRF site, which has positive ramifications relative to reclamation pipeline infrastructure cost. - Overall, while both valleys have substantial irrigable acreage, there are greater opportunities in the Morro Valley, near the Rancho Colina site, as well as greater demand for irrigation water in that valley, which has been historically pumped into overdraft.	Rancho Colina
E. Are there unique regulatory or logistical constraints that may limit potential water supply or reclamation benefits of a regional facility at the CMC site? How does that compare to Rancho Colina?	The following are substantial logistical constraints at the CMC site: - The transfer of operations of the current facility from the State (CDCR) to the County; - CDCR's current lack of interest in effecting a transfer since this would	Rancho Colina



Table ES-1. Summary of Report Findings		
Key Issue or Question	Major Findings	Better Site
	not be major, long-term program that would not meet any agency goals or priorities, as confirmed by CDCR staff; - The fact that multiple state agencies would need to study and approve a potential transfer and involvement of municipal customers such as Morro Bay and CSD, which will take considerable time; - The County's lack of urgency and/or staff availability in leading the effort to investigate and operate a regional facility; - The need to establish a multi-party agreement among potential water supply beneficiaries for reclaimed water that is discharged to Chorro Creek; - A lack of a coordinated effort and differing goals between the City of Morro Bay and CSD relative to moving forward with a new WRF; and - The fact that the four potential partner agencies have not engaged in any preliminary coordination efforts toward a potential working framework, an effort that would need to be led by the County. - Collectively, these interagency logistical issues present significant challenges, and raise substantial concerns that a new regional facility can be built and operated at the CMC site in the near future. The following issues apply to the Rancho Colina site: - The possible need to establish a multi-party agreement among potential water supply beneficiaries for reclaimed water that is discharged to Morro Creek, if reclaimed water is not stored in percolation ponds or offsite ponds for potential agricultural use; - Pipeline infrastructure associated with the project that may be within Caltrans rights-of-way would require an encroachment permit from that agency. - Overall, the Rancho Colina site can be much more realistically accomplished within the framework of the City's goals related to timing, water supply benefits, and reclamation potential.	
F. Are there physical site constraints at CMC that may limit project design flexibility? Will a regional facility likely be an expansion of the existing facility or will an entirely new facility be required?	TBD	TBD
G. What are the environmental issues that may be of concern to the Coastal Commission or the general public at the CMC site as compared to Rancho Colina?	- Overall, neither site has a particular advantage from the standpoint of environmental issues that may be of concern to the Coastal Commission. - Each site is far from the coast and separated by intervening topography, so a new WRF at either location will not be visible from the coast or block coastal access. - Neither site is subject to coastal hazards because of their elevation and distance from the ocean or estuary.	Both sites are similar



Table ES-1. Summary of Report Findings		
Key Issue or Question	Major Findings	Better Site
	- The most developable portions of both sites do not contain designated ESHA, although there is ESHA on the margins of both Chorro and Morro Creek. - The entire CMC site is considered prime farmland, although the existing wastewater plant location is not in agricultural production. The most developable portion of the Rancho Colina site does not contain prime soils, although the lower portion of the property is considered prime if irrigated and drained. The Rancho Colina site supports grazing activities. - Neither site supports known cultural resources, but there is the potential to do so at either location because of known prehistoric human habitation in the area. Pipeline infrastructure from the Rancho Colina site would traverse a known cultural resource site, CA-SLO-165, which may result in impacts that require mitigation. - The Rancho Colina site is substantially closer to the City's existing infrastructure network than the CMC site, and thus development at that location may use somewhat less energy—which translates into lower greenhouse gas emissions.	
H. How will the discharge limitations and design goals of the treatment facility differ at the CMC and Rancho Colina sites? How will the treatment facilities differ as a result?	- Overall, the CMC site presents greater permitting challenges than development at the Rancho Colina site, which will have a direct adverse impact on the cost of the facility at that location. - The CMC wastewater treatment plant discharge presents the most stringent regulatory requirements and greatest risk for additional requirements in the future. These have a direct impact on the cost to construct and operate the treatment facility, in addition to the City's ability to anticipate and plan for future costs. - Stakeholders such as the Morro Bay National Estuary Program and regulatory agencies with jurisdiction over aquatic habitat and endangered species must be consulted prior to planning an expansion at CMC. Their input could impact permitting requirements, as well as ability to redirect treated effluent in the future if a different direct reuse opportunity is identified (for example, the City of San Luis Obispo's attempts to expand its recycled water program). - A Rancho Colina facility that incorporates direct reuse of treated water with wet weather disposal through the ocean outfall (or via percolation ponds if appropriate sites are identified) presents the least discharge permit challenges and requires fewer onsite plant treatment facilities. - A recycled water program (including agreements with users, capital investment in pumping and pipelines, and ongoing operation and maintenance) that complies with Title 22 requirements will be required to implement this strategy and must be factored into the site selection decision. The current recommendation, in order to comply with the City Council's 5-year timeline, is to work on this long-term planning and design effort in concert with planning, design, and construction of the Phase 1 WRF project if the Rancho Colina site is selected.	
I. Is the City's 5-Year timeframe goal	Because of a variety of logistical constraints, it is not realistically	Rancho Colina



Table ES-1. Summary of Report Findings		
Key Issue or Question	Major Findings	Better Site
achievable at the CMC site? What studies, permitting requirements, or logistical challenges may affect achieving this goal?	possible to achieve the City's 5-year goal at the CMC site. At the Rancho Colina Site, because of a willing and cooperative property owner, and the fact that neither the State nor the County would be involved in the ownership or operation of the facility, the City's 5-year goal may be achievable.	
J. What would the City's role be in constructing and operating a regional facility at CMC? How will an interagency framework affect the City's ability to achieve its stated goals?	- The City would own a facility at Rancho Colina but would likely be a customer or non-majority partner at CMC. - For a CDCR-owned facility at CMC, the City and/or CSD would still be responsible for constructing and maintaining pipeline infrastructure to and from the site. This complex arrangement could lead to conflict among the agencies relative to shared responsibilities in the event of a breakdown in the system. - Developing a project at the Rancho Colina site would allow the City to direct the project and meet stated City goals. Participating in a regional CMC project will turn over control to CDCR and unless City objectives align with those of CDCR, those desired project elements may not necessarily be included.	Rancho Colina
K. Does either site have comparative advantage relative to securing possible funding (grants and loans) for a new regional reclamation facility?	- Since either project can be tied into water supply benefits, both could pursue similar grant and loan programs. - The Rancho Colina site could have a slight edge over the CMC Regional site since improving quality and supply of groundwater in the Morro Valley could address a disparity between existing safe yield and basin demands, reduce risk of seawater intrusion, and help export nutrients and salt from the Morro Valley groundwater basin. - CDCR could have access to various state funding sources for the Regional CMC site. However, since the plant upgrade would not address any agency priorities it is unlikely that they would assist with providing funds to upgrade the facility. Since the County would not take over the CMC WWTF, according to CDCR staff, County resources are not likely to be different than those that would be available to support a Rancho Colina site (e.g., coordination of Integrated Regional Water Management Plan-related funding).	Both sites are similar
OVERALL		Rancho Colina



2. Background

In 2013, the City of Morro Bay examined many potential sites for building a new WRF, which included the CMC site among six others. To inform that process, there were several public workshops and stakeholder interviews, which culminated in the release of the *First Draft Options Report* on October 29, 2013. That report found that the CMC site was the lowest ranked among the seven potential sites, but this ranking was based on the assumption that the City would be building a facility at that location on its own, without any participation from other potential partner agencies. This conclusion drew criticism from some, but was based on the fact that the City and Cayucos Sanitary District (CSD) were at that time pursuing separate paths toward locating a suitable site to replace the existing Wastewater Treatment Plant site, which had been rejected by the California Coastal Commission in January 2013. At that time, the CSD's publicly stated desire was to conduct an independent analysis of project alternatives that would be most beneficial to CSD ratepayers.

County Coordination with CDCR – Late 2013

The same day as the release of the *First Draft Options Report*, the San Luis Obispo County Public Works Department sent a letter to the California Department of Corrections and Rehabilitation (CDCR) indicating its interest in, and making an argument for, the potential transfer of the existing water and wastewater operations for the CMC facility from the State to the County (**Appendix A**). In that letter, the County stated its primary objectives in effecting this transfer would be to:

1. *Ensure reliability of service; and*
2. *Enhance emergency responsiveness*

In the first case, these objectives related to enhancing the County's ability to supply water within its existing distribution network. In support of the first objective, the County cited concerns with the State's ability to efficiently operate and maintain the facility. In the case of the second, the County argued that under County control, the facility would have access to various County water supplies in the event of an emergency, including Nacimiento water, rather than relying on State Water, which is the facility's current supply, and considered at-risk given the current drought situation.

The County also cited two secondary objectives:

1. *Capital project planning and implementation; and*
2. *Local needs and regulatory alignment*

In the case of the first of these, it was argued that under County control, the CMC operations would benefit from the County's AAA bond rating and its superior ability to secure funding for large capital projects.

Note that neither of the County's two primary objectives nor its first secondary objective had anything to do with the City of Morro Bay, but rather to enhance County operations and public works infrastructure. Another secondary objective, however, noted that as an ancillary benefit, it would be potentially beneficial to seek Morro Bay's and CSD's participation in an expanded wastewater treatment facility, primarily to lower costs to all participating agencies. Although no studies, cost sharing estimates, or related information was included to support this argument, as a concept it was stated that



this information would need to be provided as “part of the project alternatives analysis that Morro Bay and Cayucos will need to update.” Thus, the County presumed that Morro Bay and Cayucos would—whether independently or together—prepare studies for a concept that may or may not be in either’s interest relative to addressing either agency’s goals, including those relative to minimizing costs and timing.

In this latter objective to include Morro Bay and CSD into this “regional facility” concept, the letter stated that this arrangement “may be preferable to both the Regional Water Board and the California Coastal Commission,” although it should be noted that neither agency’s board had taken a position on this issue at the time the letter was written, and have not since. In the *Fine Screening Analysis* (Dudek, November 2011), the CCC suggested potential support for a facility located in the Morro Valley, and did not comment on the CMC site.

The County acknowledged the potential difficulties in coordinating with CDCR to transfer control to the County and expand operations to include other agencies such as Morro Bay and CSD. The letter acknowledged that CDCR has not always benefitted from such transfers in the past, as well as other issues: 1) new regulatory mandates could increase costs to all parties involved; 2) there would be challenges in implementing a workable multi-agency framework; 3) the potential transfer of equipment and some CMC employees to the County, addressing equitable salary and benefits; and 4) various security issues related to CMC operations.

In summary, the letter presented the County Public Works Department’s desire to take control of the CMC facility from the State, and to the extent it might be beneficial to include other agencies in this effort (such as Morro Bay and CSD), to do so. There were no supporting studies, data, or other documentation provided to assist CDCR in its evaluation of this proposal. What seemed certain was that if this transition were to occur, the County would need to lead the effort.

In that letter, the County stated that there was to have been a meeting with CDCR on November 8, 2013 to discuss this proposal further. It is not certain if this meeting ever took place. Then-Director Paavo Ogren, the author of the letter, has since left the County. Deputy Director Mark Hutchinson, who has since taken charge of this effort for the County, does not recall if this meeting ever took place (personal communication, email of October 15, 2014). Thus, it appears uncertain CDCR ever seriously evaluated this possibility, and it appears that neither the County nor the State followed up with each other in a meaningful way after that letter to further the discussion.

City Council Actions and Coordination with Partner Agencies, 2013-14

The City Council considered the *Options Report* at hearings on November 12 and December 10, 2013. The *Options Report* did not consider the regional concept at CMC, since it had just been suggested in writing by the County only days before.

At the November 12, 2013 Council meeting, one member of the public expressed support for the CMC site and its potential for expansion. Councilmember Christine Johnson, citing the County’s October 29 letter to the State, suggested that City staff talk to County staff about this possibility. Councilmember Noah Smukler echoed this idea, suggesting an investigation of sharing costs at that site.



It was in that environment that the City Council adopted the *Second Draft Options Report* on December 10, 2013. Based on the evidence presented, the Council chose the Morro Valley as the highest-ranking location for citing a new WRF to serve the City, and confirmed its goals related to the WRF. It also directed staff to further investigate the top three sites in the Report, for the purpose of establishing the best overall location for a new WRF. In the *Second Draft Options Report*, the CMC site continued to rank last as a City-only facility, since circumstances relative to that site had not changed since October, other than the letter sent from the County to the State, apparently without response.

In February 2014, the City Council established the additional goal to complete the WRF within 5 years of selecting a specific site. The 5-year goal was driven by several factors, including: 1) the excessive cost of operating a 60+ year old plant that has deferred major process rehabilitation or replacement while a new plant has been in development; 2) the need to define a primary site so that a project description could be finalized as a first step to pursuing drought grant funding while it is still available; 3) a settlement agreement timeline which dictated completion of a new treatment facility by 2014; and 4) construction cost escalation, which continues to increase as the economy improves.

On March 21, 2014, City staff coordinated a meeting at the Regional Water Quality Control Board (RWQCB) that included key staff from County Public Works, RWQCB, and CSD to discuss the County's progress on the transfer of the CMC site to the County, and the possible investigation of including the City and CSD in a regional facility at that location. RWQCB Executive Officer Ken Harris led off the meeting indicating his support for the regional facility concept at that location, citing the possibility that funds might be available for this, and that future state regulations would encourage direct potable reuse of treated water that may result from such a facility. He also stressed the importance of defining the project description quickly to "get in line" early for funding opportunities that may be available as a result of the drought.

As he stated in his letter of October 29, 2013, Paavo Ogren suggested that such a facility could reduce costs for Morro Bay and CSD, but did not have any studies to support this assertion. The consensus at this meeting was that more study would need to be done relative to what it would take to expand the existing plant, but the County indicated it had neither the staff nor money to conduct this investigation. Both the RWQCB and the County agreed it would make sense for the County to operate such a facility, if it were to be built. The County did not report on any further discussions or negotiations with the State regarding a potential facility transfer at this meeting.

On May 13, 2014, the City Council chose the Rancho Colina site as its preferred option, based on the *Report on Reclamation and Council Recommended WRF Sites* (JFR Consulting, May 2014). At the same time, based on the March 21 meeting between the City, County, RWQCB, and CSD, it also directed further study of the regional concept at the CMC site. It also directed staff to coordinate with and seek financial contribution to this study from other interested agencies, including the County, RWQCB, and CSD.

Investigation of the CMC Site as a Regional Facility – Summer and Fall 2014

In May 2014, Paavo Ogren resigned from his position as the County's Public Services Director to become General Manager at Oceano Community Services District. No replacement was immediately named, but Deputy Director Mark Hutchinson took control of issues related to the CMC facility. In July 2014, Mark Hutchinson contacted CDCR regarding whether it was interested in pursuing the transfer of the CMC



facility to the County. CDCR did not indicate a high level of interest at that time. This was the first apparent contact from County staff to CDCR since October 2013.

During the summer of 2014, City consultants began investigating the CMC site for its regional potential and the City's possible participation in such a facility. The supporting studies that inform the investigation focus on a variety of issues, including cost, logistics, design, water rights, environmental concerns, financing, timing, and interagency coordination, the results of which are included in this report.

The underlying assumptions of this investigation are that: 1) the County has been working with CDCR to effect a transfer of the CMC site to the County; 2) CDCR is willing to do this; 3) that such a transition can occur in a timely manner to be consistent with the City's stated 5-year goal; and 4) that the County is willing and able to prioritize the design, construction and operation of this expanded facility in a manner consistent to meet the needs of the City and CSD. If any of these assumptions prove to be false, this would potentially eliminate the CMC site as a suitable location to meet the City's timing goals for a new WRF.

Interagency Coordination - October 2014

At the October 9, 2014 JPA meeting between the City and CSD, Ken Harris of the RWQCB again spoke in strong support of the CMC site as a regional facility. The County's Mark Hutchinson, however, while indicating support for the concept, admitted the CMC project is not a high County priority, and that there is neither sufficient staff nor money to move forward on this any time soon. As he noted, if the idea were to go forward in a short time frame, it would have to be done without the County's leadership. Note that according to the County's letter of October 29 to CDCR, this fact by itself could seriously hamper the potential regional use of this facility:

"Utilizing CMC facilities as a regional treatment plant has been part of recent discussion, but it is our understanding that CDCR cannot provide municipal services [emphasis added]. As a result, if this option is beneficial, then it is likewise our understanding that transitioning operations to the County will provide the ability for the treatment plant to serve local needs." (Letter from County Public Works to CDCR, 10-29-13)

On October 15, 2014, City staff engaged in a discussion with CDCR's Jeff Stanley, who indicated that there have been no meaningful recent discussions with the County to effect a possible transfer of the CMC facility to the County, and that this is not something CDCR is particularly interested in at the State level. Even if a transfer process were to begin today, it would take at least 2 to 5 years to complete before any further work related to project design could begin. In addition, CMC just recently upgraded its facility to better accommodate its current users and address effluent permit violations from the past several years, so CDCR has no desire to further modify this plant in the near future.

On October 20, 2014, City staff coordinated a meeting among CDCR, RWQCB, and CSD for the purpose of coming to a clear understanding among all parties about the whether there is any realistic potential of a transfer of the facility from the State to County, and the potential for a regional facility to be built at that location. County Public Works Department staff was also invited to the meeting, but could not participate citing lack of time and available staff.



In that meeting, CDCR staff led by Associate Director Fred Cordano confirmed that there has been little coordination with the County in the past year, consistent with what is discussed above. Although not opposed to expanding its existing facility to accommodate other regional partners, it will not be actively pursuing this course of action, since it recently upgraded its facility to improve its existing operations to meet RWQCB requirements. At this point, CDCR's primary interest with the CMC site is the extent to which any action there could improve its ability to improve the reliability of its long-term water supplies. CDCR also confirmed that if a regional wastewater plant would go forward, it would retain ownership of the facility, even if the County were to assume operations. The County could not comment on this perspective, because no County staff were present at the meeting. In addition, CDCR stated that it would retain control of the facility only, and that it would be the responsibility of the various municipal partners to extend pipeline infrastructure to and from the site, including the construction, operation and maintenance of these offsite facilities (which would include the raw wastewater pump station, approximately 8 miles of force main, and approximately 8 miles of brine disposal pipeline).

CDCR also stated that there would be numerous internal logistical challenges for such a facility to move forward. For one, CDCR would not be the only state agency that would need to approve such a concept, which would also require review and approval from the State Department of General Services and State Public Works Board. This process would require extensive study and review, which CDCR staff suggested might take a year or more just to determine whether or not the State would be supportive of this concept.



4. Key Issues and Questions

The December 2013 *Options Report* compared the general suitability several sites, but did not consider the possibility of a regional facility in the analysis. The criteria for evaluating the regional question are related to, but somewhat different than, those included in the *Options Report*. The key questions and issues to address the regional issue are as follows:

- A. What are the unique *regional* benefits associated with constructing a regional facility at the CMC site instead of a facility at Rancho Colina? How do these relate to the City's stated goals for the new WRF?
- B. Are there potential cost savings for the City if it participates in a regional facility as compared to Rancho Colina? How will the construction and operation of ancillary facilities the City would need (such as a raw sewage conveyance pipeline from CMC to the City) affect the cost to the City? How do the capital costs compare, as well as the lifecycle costs, of both alternatives?
- C. Are there unique water supply benefits for the City associated with the CMC site as compared to Rancho Colina? How does the future potential for direct potable reuse factor into this?
- D. What are the water reclamation opportunities for agricultural use from a regional facility at the CMC site, and how do these compare to Rancho Colina?
- E. Are there unique regulatory or logistical constraints that may limit potential water supply or reclamation benefits of a regional facility at the CMC site? How does that compare to Rancho Colina?
- F. Are there physical site constraints at CMC that may limit project design flexibility? Will a regional facility likely be an expansion of the existing facility or will an entirely new facility be required?
- G. What are the environmental issues that may be of concern to the Coastal Commission or the general public at the CMC site as compared to Rancho Colina?
- H. How will the discharge limitations and design goals of the treatment facility differ at the CMC and Rancho Colina sites? How will the treatment facilities differ as a result?
- I. Is the City's 5-Year timeframe goal achievable at either the CMC or Rancho Colina site? What studies, permitting requirements, or logistical challenges may affect achieving this goal?
- J. What would the City's role be in constructing and operating a regional facility at CMC? How will an interagency framework affect the City's ability to achieve its stated goals?
- K. Does either site have comparative advantage relative to securing possible funding (grants and loans) for a new regional reclamation facility?



5. WRF Sites Under Consideration

The analysis compares two sites relative to their suitability as a regional water reclamation facility. **Figure 1** shows the two sites in their regional context. These are described below.

CMC Wastewater Site

The CMC Wastewater site consists of two adjacent parcels. The existing CMC wastewater treatment facility is located on a small portion of a 249-acre parcel (APN 067-051-006), generally on the low-lying area south of Chorro Creek, about 5 miles east of the Morro Bay city limit along Highway 1. It is adjacent to, and on a separate parcel from, another 119-acre parcel (APN 073-221-028) located on the Cuesta College campus, which was the focus of the December 2013 *Options Report*. **Figure 2** shows this site in the context of existing development and surrounding land uses.

This site is adjacent to Chorro Creek, and is relatively close to other tributary drainages. With the exception of a small area in the western part of the site designated AG (Agriculture), the site is designated as PF (Public Facility) under the County's General Plan. The southerly parcel on the site includes an existing wastewater treatment plant that serves the California Men's Colony, while the northerly parcel is currently developed with several facilities, including a small airstrip and supporting buildings.

The State of California Department of Corrections and Rehabilitation (CDCR) owns the site. The current treatment plant and the majority of the site is within the Coastal Zone. The current facility is within the Coastal Zone. The study site is about 190 to 200 feet above sea level.

Rancho Colina Site

The 187-acre Rancho Colina Site (APN 073-085-027) is located about a mile east of the Morro Bay city limits, just north of and adjacent to Highway 41. The property also extends across the highway to the south, and is adjacent to Morro Creek (**Figure 3**).

With the exception of the southernmost portion of the property, the site is designated AG (Agriculture) under County jurisdiction. The southernmost portion of the site is designated a REC (Recreation). The site is entirely in the Coastal Zone.

The site is currently developed with several facilities, including a single-family home occupied by the property owner, and by an existing wastewater treatment facility constructed in 1971, which serves the nearby Rancho Colina residential community. The focus of this report is on a roughly 10 to 15-acre area in the lowest portion of the property, generally in the vicinity of the location of the existing WWTP, but could be expanded as appropriate. The study site is about 150 to 160 feet above sea level.



Figure 1. Overview of Study Sites



Figure 2. CMC Wastewater Site



Figure 3. Rancho Colina Site



6. Comparative Site Analysis

The following analysis compares the two sites based on the key issues and questions described in Section 3 of this report.

A. What are the unique *regional* benefits associated with constructing a regional facility at the CMC site instead of a facility at Rancho Colina? How do these relate to the City's stated goals for the new WRF?

Why This Issue is Important. While the *Options Report* considered the issues associated with pursuing a City-only new WRF, other agencies have expressed the desire to develop a regional wastewater treatment facility if found to be beneficial to those agencies. This concept has the potential support of the Executive Director of the Regional Water Quality Control Board (RWQCB), and has most closely been associated with the CMC site, a location that was rejected in the *Options Report* if the City were to pursue the development of that site on its own. The merits of the CMC location as a regional site are addressed below.

In general, potential regional benefits would fall under one of three categories:

- Administrative. This concept addresses the potential benefits of pursuing a single multi-agency facility at the CMC site rather than two facilities—one at Rancho Colina, and the continuing use of the CMC site.
- Regional Water Supply and Distribution. While potential water supply benefits to the City are discussed previously, this concept considers whether the location of either site offers an advantage relative to potential regional distribution of reclaimed water. Specifically, is either site closer to existing pipeline infrastructure that would allow for possible out of basin water transfers that could serve others in the region beyond the City of Morro Bay.
- Economic. Does either site offer long-term regional economic advantages? Possible advantages might include being able to use reclaimed water on higher value crops. Another potential advantage would be cost savings in the construction, maintenance and operation of such a facility and related pipeline conveyance infrastructure relative to affected ratepayers. Finally, would a regional multi-agency facility at either location offer economic advantages relative to the ability to secure funding (grants and loans) to build and operate the facility?

Comparative Site Analysis. The following discussion compares the sites with respect to the suitability as a regional facility, and the relative advantages of each.

CMC Wastewater Site

From a locational standpoint, this site has potential as a regional facility, since it is centrally located with respect to several potential users, including the California Men's Colony, City of Morro Bay, Cuesta College, Cayucos, and various property owners in the Chorro Valley. Specific advantages associated with



the CMC site are discussed below:

Administrative. If the existing CMC facility were expanded to accommodate Morro Bay and Cayucos, it would allow for the existing Morro Bay/CSD WWTP to be retired without the need to find a brand new site, or to operate two facilities. In this case, all players would operate under a single permit at the CMC site, which would likely be a long-term administrative advantage for permitting agencies such as the RWQCB. In the short-term, developing a workable multi-agency framework to construct and operate the expanded facility may be potentially problematic. This would be particularly true if the State Department of Corrections and Rehabilitation (CDCR), who operates the current facility, does not take a substantial leadership role in the development and operation of such a facility. (See Sections 6.E. and 6.I. for further discussion of this issue.)

Similarly, if the facility is to be transferred to the County, it is uncertain whether the County would be willing or able to take on a leadership role in the near-term, since County staff has gone one record indicating that they do not have sufficient staff to lead this effort right now, and that other major infrastructure projects (such as the Los Osos Wastewater Treatment Plant) have higher priority.

That said, if these substantial obstacles can be overcome, in the long-term it may be administratively less complex to operate one facility instead of two.

Permitting from the RWQCB could be facilitated to some extent if this site were chosen. The RWQCB's Executive Officer has been consistently supportive of this location as a regional facility, citing the need to "look 75 years down the road." Although he has not defined what this means, he has implied that it refers to the concept that a state-of-the-art facility that serves multiple beneficiaries in the region would be preferable to outdated facilities that do not accomplish this goal. Although he has pledged his personal support and cooperation to facilitate permitting at this location, his board has not taken a position about the regional benefits of this site or any other, and it is unclear if that agency would be similarly supportive of any other site that accomplishes regional objectives consistent with RWQCB goals.

In a meeting with CDCR, City of Morro Bay staff, and CSD staff on October 20, 2014, RWQCB staff acknowledged that there appeared to be no obvious relative regional advantage of the CMC site over the Rancho Colina site, except to the extent that all potential partner agencies would be concentrated at a single location, which may potentially allow for some cost-sharing and would minimize the number of permits required. RWQCB staff also acknowledged challenges with expanding the CMC facility associated with meeting certain potential water quality objectives in Chorro Creek included in the existing permit for the existing CMC facility.

Regional Water Supply and Distribution. Some have expressed that the CMC facility would be relatively conducive to distributing reclaimed water throughout the region, as appropriate. The key question here is the relative proximity of the facility to existing pipeline infrastructure that could be used to convey treated water to potential users outside the immediate vicinity.

Two regional water conveyance systems operate in the vicinity of CMC site, Morro Bay, and Cayucos: the Whale Rock Reservoir Water System and Chorro Valley Turnout. Whale Rock Reservoir stores approximately 40,660 AF and is located approximately 1 mile east of Cayucos and is jointly owned by the City of San Luis Obispo, CMC, and Cal Poly. CMC and the City of Morro Bay have a mutual aid agreement



related to water resources in the event of an emergency. The City of Morro Bay can receive Whale Rock water that is treated at the CMC Water Treatment Facility and routed through the Chorro Valley Water System pipeline to the City's Kings Tank.

The Chorro Valley Turnout conveys State Water from the Coastal Branch of the State Water Pipeline to CMC, the County Operations Center on Kansas Avenue, Cuesta College, and the City of Morro Bay. It delivers 2,338 AFY during years when the State Water can allocate 100% of contractors' contracted amounts. The Turnout terminates at the City of Morro Bay's water system as shown on **Figure 4**.

Both pipelines are located approximately 1.5 miles to the northeast of the existing CMC WWTP on the north side of Highway 1. The Whale Rock pipeline passes through the City of Morro Bay near Highway 1 to Cayucos, approximately 1.5 miles southwest of the proposed Rancho Colina site, and the Chorro Valley Turnout terminates at the City's Kings Tank within City boundaries.

There are connections between the two pipelines. For example, Whale Rock water can be treated at the CMC Water Treatment Plant and conveyed through the Chorro Valley Turnout.

Since both proposed sites are located within 2 miles of the Whale Rock pipeline, and the Chorro Valley Turnout terminates at the City's water distribution system, either site could be incorporated into regional water delivery systems in the future if direct potable reuse is pursued.

Economic Issues. In addition to the cost of constructing and operating the facility (which is addressed elsewhere), there are several other issues that relate to the long-term economic health of the region. The first relates to long-term pumping costs. As a general concept, it would be cheaper to transport treated water long distances within the region than untreated wastewater, which includes solids that would require substantially more energy to pump, and will also require a higher level of pipeline maintenance to prevent clogging. Thus, a site that minimizes the distance between wastewater generators and the treatment facility would be preferable from the perspective of long-term economic and energy sustainability. Assuming that treated water would be potentially available throughout the region via an existing pipeline network, the relative economic advantage of locating a facility near to regional water users is comparatively less.

Issues Related to Pumping Costs

In a regional facility, residents of the City of Morro Bay would be the largest single group of wastewater generators; the City has a population of roughly 10,000, which does not include visitors to the City's hotels, shops and restaurants. Cayucos would contribute an additional population of about 2,500. The California Men's Colony has a population of about 5,000. While Cuesta College has a student population of about 11,000, this population is transient and effectively substantially less than that number if normalized to a full-time population. Thus, if the facility were to include users from each of these agencies, the greatest economic advantage would be if the facility were relatively closer to Morro Bay and Cayucos.



Figure 4. Regional Water Distribution Facilities.



Another way to put it, the CMC site is about 6 linear miles from Morro Bay, and over 11 miles from Cayucos—even farther from each when actual pipeline routes would need to be considered (the most feasible pipeline route from CMC to Morro Bay is along a proposed regional bike path about 8.1 miles). Thus, the majority of the permanent population that such a facility would serve would be anywhere from 6 to over 11 miles from the treatment facility. This would result in substantial and permanent pumping costs to serve these two communities if they were partners in a regional facility at this location.

On the other hand, the current CMC site makes logical sense to serve the population of the Men's Colony and Cuesta College, since it is relatively close to both facilities. It is adjacent to Cuesta College, and about 3 miles downstream of the Men's Colony. Adding the combined flows of Morro Bay and Cayucos, whose combined population is more than twice that of the Men's Colony, but whose location is also more than twice as far, would greatly minimize the economic benefits of such a multi-agency regional facility, at least to Morro Bay and Cayucos.

Agriculture and Crop Valuation

Another aspect of potential regional benefits are those associated with crop valuation. If a regional facility could provide reclaimed water to an area with the greatest acreage—and highest value—crops, there would be a potentially higher regional economic benefit. As noted in Tables 1 through 3 (and summarized below), there is more high value agricultural acreage in the Morro Valley than in the Chorro Valley:

- Chorro Valley: 546 irrigated acres; 128 potentially irrigated acres
- Morro Valley: 1,094 irrigated acres

Development at the CMC site would be more beneficial to crops in the Chorro Valley than the Morro Valley, because of the proximity of the facility to nearby agriculture. However, there is less irrigated agriculture in the Chorro Valley, and crops there generally have a lower value per acre. In addition, there is a less acute need to find additional water to irrigate crops in the Chorro Valley as compared to the Morro valley. In general, most mixed crops that might be grown in the Chorro Valley have a per acre value between \$5,000 and \$9,000, which is less than the per acre value of avocados (\$9,549), which is the mainstay of the Morro Valley.

Table 1 shows the values for irrigated crops that might be potentially grown in the Chorro or Morro Valleys:

Table 1. San Luis Obispo County Selected Crop Values, 2013			
Crop	Tons/acre	Value/ton	Value/acre
Avocados	4.935	\$1,935.00	\$9,549.23
Bell pepper	14.044	\$655.88	\$9,211.18
Bok choy	15.654	\$576/11	\$9,018.43
Broccoli	6.041	\$987.59	\$5,966.03
Cabbage	24.652	\$351.81	\$8,672.82
Cauliflower	11.231	\$849.79	\$9,543.99



Table 1. San Luis Obispo County Selected Crop Values, 2013			
Crop	Tons/acre	Value/ton	Value/acre
Lettuce, head	14.346	\$366.54	\$5,258.38
Lettuce, leaf	13.756	\$493.07	\$6,782.67
Napa cabbage	20.545	\$412.19	\$8,468.44
Oranges	14.293	\$332.00	\$4,745.28
<i>Source: 2013 Annual Report, SLO County Department of Agriculture.</i>			

Mixed vegetable crops, such as what is typically grown in the Chorro Valley, range in value from \$400 to \$650 per ton. Broccoli and cauliflower are somewhat higher, ranging in value from \$850 per ton (cauliflower) to \$987 per ton (broccoli). Typical mixed vegetable crop values range from \$5,900 to \$9,500 per acre, which for the most part are high volume crops ranging from 10 to 25 tons per acre. Based on the potential irrigable area of 674 acres, this translates to a potential crop value ranging from roughly \$4 million to \$6 million. Reclaimed water, if it can be applied to any or all of this acreage, would help realize this potential value. That said, it is not known what the cost of reclaimed water to the growers might be, which would offset some of the potential economic benefit of the reported crop values. In addition, as noted before, it is likely that since there is less demand for water related to agricultural irrigation in the Chorro Valley, the net potential economic benefit would be less.

Rancho Colina Site

Like the CMC site, Rancho Colina has potential as a regional facility, since it is centrally located with respect to several potential users, including the City of Morro Bay and CSD, and various property owners in the Morro Valley. Specific advantages associated with the Rancho Colina site are discussed below:

Administrative. If the Rancho Colina site were designed as a regional facility to accommodate the flows from both Morro Bay and Cayucos, it would allow for the existing Morro Bay/CSD WWTP to be retired. Under this scenario, the existing CMC site would continue to operate and serve the Men's Colony, Cuesta College, and County Operations Center. In effect, the same agencies in the region would be served, but through two smaller regional facilities than one larger one at the CMC site. This arrangement would be potentially less advantageous to the RWQCB, who would need to permit two facilities rather than one. Setting aside the previously-described administrative obstacles to developing a multi-agency framework under the guidance of the State and County, it may be administratively less complex to operate one facility instead of two.

That said, RWQCB staff has acknowledged that there appeared to be no obvious relative regional advantage of the CMC site over the Rancho Colina site, except to the extent that all potential partner agencies would be concentrated at a single location, which may potentially allow for some cost-sharing and would minimize the number of permits required, noting further that there would be no land acquisition costs at the CMC site. RWQCB staff also acknowledged challenges with expanding the CMC facility associated with meeting certain potential water quality objectives in Chorro Creek included in the existing permit for the existing CMC facility. This latter challenge would not be an issue at the



Rancho Colina site if a combination of reuse and discharge options include direct agricultural reuse, ocean outfall (during wet weather), and/or percolation ponds. A discharge to Morro Creek would have more permitting constraints, but less so than a Chorro Creek discharge since the creek is an impaired water body as discussed in other sections of this report.

Regional Water Supply and Distribution. Some have expressed that the CMC facility would be relatively conducive to distributing reclaimed water throughout the region, as appropriate. The key question here is the relative proximity of the facility to existing pipeline infrastructure that could be used to convey treated water to potential users outside the immediate vicinity.

Please refer to the discussion under the CMC site. Since both proposed sites are located within 2 miles of the Whale Rock pipeline, and the Chorro Valley Turnout terminates at the City's water distribution system, either site could be incorporated into regional water delivery systems in the future if direct potable reuse is pursued.

Economic Issues. As noted in the analysis of the CMC site, a location that minimizes the distance between wastewater generators and the treatment facility would be preferable from the perspective of long-term economic and energy sustainability. Assuming that treated water would be potentially available throughout the region via an existing pipeline network, the relative economic advantage of locating a facility near to regional water users is comparatively less.

Issues Related to Pumping Cost

In a regional facility, residents of the City of Morro Bay would be the largest single group of wastewater generators; the City has a population of roughly 10,000, which does not include visitors to the City's hotels, shops and restaurants. Cayucos would contribute an additional population of about 2,500. The California Men's Colony has a population of about 5,000. While Cuesta College has a student population of about 11,000, this population is transient and effectively substantially less than that number if normalized to a full-time population. Thus, if the facility were to include users from each of these agencies, the greatest economic advantage would be if the facility were relatively closer to Morro Bay and Cayucos.

The Rancho Colina site is about a mile from the City limits, and about six miles from Cayucos (following road rights-of-way). This is substantially closer than the CMC site is to either agency, and thus the cost of pumping untreated wastewater from those locations would be substantially less. This would result in substantial and permanent pumping costs to serve these two communities if they were partners in a regional facility at this location.

Agriculture and Crop Valuation

As noted previously, there is more high value agricultural acreage in the Morro Valley than in the Chorro Valley:

- Chorro Valley: 546 irrigated acres; 128 potentially irrigated acres
- Morro Valley: 1,094 irrigated acres

Development at the Rancho Colina site would be more beneficial to crops in the Morro Valley than the Chorro Valley, because of the proximity of the facility to nearby agriculture. There is substantially more irrigated agriculture in the Morro Valley, and crops there generally have a higher value per acre, typically



avocados, which have a reported average 2013 value of about \$9,500 per acre. And, as noted above, there is higher agricultural demand for water in the Morro Valley, as evidenced by the fact that extensive groundwater pumping in this basin exceeds the basin's safe yield, which ultimately led growers to imported water in trucks, a practice that is no longer allowed.

Approximately 56 parcels ranging in size up to 450 acres include substantial irrigated portions, the largest of which is about 248 acres on a parcel owned by Morro Ranch Co. LLC. Most irrigated areas within these parcels range from 10 to 35 acres, and are generally planted in avocados. In all, there are about 1,094 acres in the Morro Valley in current or recent irrigated production, the vast majority of which are within about 1.5 miles of the Rancho Colina site, and ranging from 0.1 to 3 miles from the City limits. A few irrigated areas are somewhat farther, up to about 4.5 miles from the City up Highway 41. This compares favorably to the Chorro Valley, where most growers that could potentially use reclaimed water range from 1.5 to 5 miles to the CMC site. Thus, the likely cost of reclaimed water, based on the cost of needed pipeline infrastructure, would likely be less in the Morro Valley.

Based on the value of avocados, the 1,094 irrigable acres have a potential value of about \$10.5 million, or roughly double the value of the irrigable crops in the Chorro Valley. Thus, the relative benefit of using reclaimed water for agricultural use can be best realized in the Morro Valley, and thus from the Rancho Colina site. The cost to growers for buying the reclaimed water would need to be factored out of the benefit. That said, the reclaimed water cost would likely be relatively lower in the Morro Valley, because the distance of extending needed infrastructure would likely be less, given the relative proximity of growers to the site in comparison to those in the Chorro Valley with respect to the CMC site.

It should be noted that avocados are the County's fifth highest cash crop, and about 20% of the total acreage is in the Morro Valley. Thus, it is a regional concern that in 2014, faced with an extended drought and lack of water, many Morro Valley growers severely cut back their avocado trees to reduce pressure on the trees. This effectively reduced their potential short-term productivity of these lands, which will not fully recover until there is a reliable long-term source of water. A new WRF at Rancho Colina could likely help restore this critical component of this important regional crop.

Summary and Conclusions. In general, either site can and should be viewed as having a potential regional benefit, since either can serve multiple agencies, and provide water reuse benefits to multiple parties. The specific findings are summarized below:

- The CMC's primary unique regional advantage is that it would combine all key agencies (State, County, Morro Bay, and CSD) into a single facility, thus reducing long-term administrative permitting issues with respect to the RWQCB. This benefit, however, presumes that the substantial administrative challenge of having the State and County lead this effort can be overcome. At the same time, RWQCB staff acknowledged that there would not be any other obvious unique regional benefit with respect to the CMC site.
- Rancho Colina's unique regional benefits have to do with economics, particularly with respect to agriculture. Avocados dominate the Morro Valley, and they are a significant geographic component of this an important regional crop. By making reclaimed water available to Morro Valley growers, the potential economic benefit is higher, especially in the context of the current situation, where growers have severely cut back trees due to lack of available water.



- There is no locational advantage for either site relative to their proximity to the existing regional water distribution network. However, from a cost standpoint it is more advantageous to locate the WRF closer to the primary wastewater sources (rather than the ultimate water users), and in that respect, Rancho Colina is much better.
- Overall, while both sites have good regional potential, the comparative unique regional benefits are better at Rancho Colina, especially when viewed through the lens that developing a workable multi-agency framework and expanded facility at CMC is a remote possibility over the next several years. In contrast, the regional benefits of a new plant at Rancho Colina could likely be realized sooner, while existing regional benefits at CMC (where the State and County are currently served) can continue as is.

B. Are there potential cost savings for the City if it participates in a regional facility as compared to Rancho Colina? How will the construction and operation of ancillary facilities the City would need (such as a raw sewage conveyance pipeline from CMC to the City) affect the cost to the City? How do the capital costs compare, as well as the lifecycle costs, of both alternatives?

Why This Issue is Important. Keeping costs low was by far the most commonly cited issue expressed at public workshops during the preparation of the *Options Report*. Key components of include capital outlay, operation and maintenance (O&M), and user costs. Unlike capital costs, O&M would be an ongoing cost through the life of the facility. But for many, the key concern is this: what would be the increased cost to ratepayers as reflected in their monthly bill?

Cost is a function of many factors, some of which are not necessarily site dependent. These include the availability of financing or grants, interest rates, and the design and construction of the WRF facility itself. These also include whether other partner agencies will be involved to share project costs and benefits. The construction of a regional facility, where costs are shared among multiple agencies, has the potential to provide cost savings in a way that a City-only facility would not. The degree of savings (if any) would be a function of the actual cost of such a facility, the maintenance responsibilities of partner agencies, and the nature of the cost-sharing agreement among those agencies.

Overall cost is sensitive to the location and configuration of the site, including the following:

- *Proximity to the City's existing wastewater conveyance system;*
- *Proximity to reclamation or water reuse opportunities;*
- *Site elevation (and intervening topography between the site and the City);*
- *Site size and configuration;*
- *Presence of environmental factors that may require special permitting;*
- *The relationship between the City and the property owner during negotiations related to site acquisition and/or use.*



Methodology. This analysis is based on a report analyzing the design and cost implications of a regional facility at the CMC site prepared by Carollo Engineers. The cost and design assumptions included in that report were then applied to the Rancho Colina site to allow for a direct comparison of the two locations. The full Carollo report is included as **Appendix B**. [DESCRIBE CAROLLO AND MKN METHODOLOGY TO ADDRESS THIS]

Comparative Site Analysis. The following discussion compares the site-oriented factors that relate to cost, and focuses on the key differences among the sites that might lead to potential savings at one site or another.

CMC Wastewater Site

[INCLUDE SUMMARY OF CAROLLO ANALYSIS AND RESULTS]

Rancho Colina Site

[INCLUDE SUMMARY OF MKN ANALYSIS AND RESULTS]

Summary and Conclusions.

Please refer to Table 6 in Section 7 of this report, *Summary and Conclusions*, for a locational comparison of all water resource-related issues, including those discussed in this portion of the analysis.

C. Are there unique water supply benefits for the City associated with the CMC site as compared to Rancho Colina? How does the future potential for direct potable reuse factor into this?

Why This Issue is Important. Until the late 1990s, the City of Morro Bay had relied completely on groundwater from wells in both the Chorro Valley and Morro Valley. Increasing limitations on the use of groundwater, including a Regional Board-mandated requirement to maintain a minimum streamflow in Chorro Creek, the potential for seawater intrusion, and contamination of a City well in the Morro basin, prompted the City to acquire State Water in the late 1990s. Today, except for the limited use of groundwater wells as needed, and the potential for a small amount of water from its desalination plant, the City of Morro Bay is currently almost completely dependent on State Water for its long-term supplies. The City typically receives 95% of its supply from State Water and the remainder from Morro Valley wells that are treated for nitrate removal at the City Water Treatment Plant. Now with the reliability of State Water in question, and historic limitations on the use of groundwater, finding new sources to augment existing supply supplies is highly desirable. A new WRF is potentially a large part of this solution, either by creating a new source of water that can be reclaimed for non-potable uses such as agriculture and landscaping, and/or potentially by recharging groundwater basins to make existing



City wells more reliable.

A new WRF in either the Morro Valley or Chorro Valley have some potential opportunity to help augment existing water supplies. However, the nature and degree of potential opportunities in these areas differs. In the Chorro Valley, existing City wells could potentially be enhanced if a new WRF is located there. However, there are more agricultural reclamation opportunities in the Morro Valley. In terms of potential direct reuse of water, should regulations change to allow this to occur, both Chorro Creek and Morro Creek offer opportunities in this regard.

This section explores issues related to augmenting the City's existing water supply, either through groundwater recharge, or potential direct reuse of water discharged to creeks.

In order to analyze and present a comparison of the water supply benefits that are unique to both sites, Cleath-Harris Geologists (CHG) performed an analysis of the maximum water supply benefit at each site. The full report is included in **Appendix C**, and forms the basis of the analysis included below.

To address the relative cost for this water supply on an AFY basis, the JFR project team also developed a preliminary cost for delivery of that water (including wastewater conveyance, treatment, discharge or conveyance of treated effluent, and potable water treatment facilities. The objective of potable water treatment is match the City's current water quality and to comply with state drinking water regulations.

The following assumptions were required to analyze the water supply benefit from discharge to Chorro Creek at the Regional CMC Site:

1. *The City will need to obtain the rights from SWRCB to pump a quantity equivalent to the City's discharge at the CMC outfall.*
2. *The resulting increase in streamflow will be available at the Chorro Creek wells for extraction. In other words, it is assumed percolation through the stream bed in the vicinity of the City wells will eventually reach the City wells and not travel elsewhere.*
3. *Both the City and CSD will discharge at the Regional CMC Site and water from both agencies will be available for the City's use.*
4. *Future regulations related to contaminants of emerging concern (CMCs) in wastewater will not affect the City's ability to discharge at CMC and draw reclaimed water through the Chorro Valley wellfields.*
5. *Opportunities for direct reuse of wastewater by agricultural users in the Chorro Valley were not considered in this analysis, but are discussed in Section 6.D of this report.*

The following assumptions were required to evaluate the maximum benefit to the City's Morro Valley wells via direct delivery of reclaimed wastewater, reduced pumping by upstream agricultural users, and in-lieu recharge of the City wells.

1. *Pumping by agricultural users will be reduced at a 1:1 ratio to recycled water delivery, and agricultural users will provide their own reservoir storage or onsite water management in exchange for low water rates.*
2. *The Cleath-Harris study assumed that only the City will convey wastewater to Rancho Colina, which is a worst case assumption from a City benefit perspective. The CSD is assumed not to be included since they had concluded the Regional CMC Site was their preference. That said, the*



Cleath analysis was expanded by the JFR project team to include CSD, in order to evaluate the impact of partnering with CSD to develop a regional facility.

3. *No seasonal reservoir storage or percolation would be provided. The benefit will be higher if seasonal storage or percolation is available during wet weather months when irrigation demand is limited.*
4. *Direct discharge to Morro Creek was not considered, but could also increase the water supply benefit. Less information is available on the relationship between Morro Creek streamflow and water availability at the Morro Valley wells than at Chorro Creek, since the City has been monitoring flow at Chorro Creek for over 4 years. However, it is known that Morro Valley has an area downstream of Rancho Colina that would allow percolation into groundwater.*

Comparative Site Analysis.

CMC Wastewater Site

In order to evaluate the maximum benefit of water supply from streamflow augmentation at the CMC Regional Site, the existing availability and quality of groundwater and projected impact of new City/CSD were considered as discussed below.

Availability and Quality of Groundwater. The CMC Regional Site discharges upstream of the City's Chorro Valley wellfields. Eight wells located in two fields were noted as having TDS levels that can range from 470 to 1,200 mg/L (2005 Draft UWMP) and nitrates that exceed state drinking water regulations. Periodic high iron and manganese levels were also noted. The Chorro Valley wells are located approximately 3 miles from the City's water treatment plant and cannot feed directly into the distribution system without nitrate reduction in order to comply with drinking water regulations. A nitrate removal facility will be required to utilize the Chorro Valley wellfields and is discussed in Section 6.B. of this report.

The City can only pump water from Chorro wells when creek levels reach 1.4 cubic feet per second (1.4 CFS) and can only extract 1,142.5 AFY according to their water supply permit.

Projected Water Supply Impact of Streamflow Augmentation at CMC Regional Site. CHG applied combined City and CSD flows to historical flow records along Chorro Creek in order to assess potential benefit of increased flows during normal years and also during the past few years of drought. CHG used both a constant monthly delivery rate based on 1.5 MGD average annual flow (1,680 AFY) and varied monthly flows to determine how seasonal plant flow variations would impact the availability of water. Based on the assumptions discussed earlier in this report, CHG concluded the following:

- Assuming 1,680 AFY of wastewater is treated and discharged to Chorro Creek, a long-term average, maximum benefit of 560 AFY would be available at the Chorro wells.
- Up to 1,000 AFY would be available during drought years.
- The percentage of available discharge is expected to vary from 505 AFY during normal years to a drought year "maximum" of 950 AFY.



Rancho Colina Site

In order to evaluate the maximum benefit to the City's water supply from direct reuse of wastewater from a Rancho Colina site by upstream agricultural users, the existing availability and quality of groundwater, and projected impact of new City flows were considered as discussed below.

Availability and Quality of Groundwater. Four active City wells are located within the Morro Valley groundwater basin. Since nitrates exceed state drinking water regulations, the wells have been directed to the City's Water Treatment Plant, which performs reverse osmosis treatment. The Draft 2005 Urban Water Management Plan noted that seawater intrusion had occurred in the past within the basin. The City's Morro Valley wells are located closer to the ocean than the Chorro Valley wells, increasing the risk of seawater intrusion if they are pumping when groundwater levels are already low.

The City's water supply permit limits extractions to 581 AFY at a limit of 1.2 cfs.

Projected Impact of New City Flows. CHG analyzed the amount of "in-lieu" recharge to the City's wells that would be available if upstream agricultural users receive direct deliveries of recycled water from the Rancho Colina site. They concluded the following:

- Assuming a 1.1 MGD average annual flow from the Rancho Colina site, excluding CSD, approximately 1,265 AFY of reclaimed wastewater would be available. If CSD were included, this would increase to 1,680 AFY.
- Over 1,500 AFY of demand is available within the Morro Valley upstream and downstream of the Rancho Colina site based on water usage factors for avocados that were developed in the San Luis Obispo County Master Water Plan.
- Due to lower demand during wet weather months, only 1,105 AFY would be applied for agricultural users without CSD and 1,330 AFY would be available with CSD.
- Assuming users apply the full 1,105 AFY without CSD, and discontinue pumping Morro Valley groundwater by the same quantity, the downstream benefit would be 320 AFY during drought and over 900 AFY during normal to wet years. With CSD, 1,330 AFY would be applied with a drought benefit of 545 AFY and normal to wet year benefit of 1125 AFY.

As shown above, adding flows from CSD would help meet dry weather irrigation demands and would increase the amount of water that could be directly reused. This would also increase the amount of water available at the City wells.

If streamflow augmentation were pursued, seepage through Morro Creek would recharge the Morro Valley groundwater basin and increase the flow that could be extracted from the City wells. The level of benefit to City wells would be similar to that at the Regional CMC Site during drought conditions.

Another important consideration at this location is that in-lieu recharge or direct streamflow augmentation will likely reduce seawater intrusion.

Summary and Conclusions. The following summarizes the major points from the analysis presented above:

- Overall, both sites have a similar level of benefit to City water supplies.



- The CMC Site presents the highest total benefit (950 AFY) to the City water supply during a drought year. During normal and wet years, over 60% of the City and CSD's treated wastewater would continue to flow to the ocean.
- The Rancho Colina Site presents the highest water supply benefit (900 AFY) to the City water supply during normal and wet years. Should the CSD choose to become a customer of the City, there could be an additional 225 AFY available resulting in a total of 1,125 AFY.
- The Rancho Colina Site with direct agricultural reuse and wet weather disposal through the ocean outfall presents the least effluent permitting challenges.
- If streamflow augmentation at Morro Creek were pursued, the permitting challenges and future regulatory risk would likely be less than those at Chorro Creek according to the Discharge Options report (LWA, 2014). The amount of water supply benefit would be similar to that at the CMC Site.

Table 2 summarizes the approximate cost per AF for the long-term water supply benefit estimated by CHG. **Appendix D** includes the assumptions that were applied to this evaluation:

[Table 2 TBA]

Please refer to Table 6 in Section 7 of this report, *Summary and Conclusions*, for a locational comparison of all water resource-related issues, including those discussed in this portion of the analysis.

D. What are the water reclamation opportunities for agricultural use from a regional facility at the CMC site, and how do these compare to Rancho Colina?

Why This Issue is Important. The City's current Local Coastal Plan/General Plan requires a new wastewater facility that meets a minimum goal of reclaiming at least 770 acre-feet per year (AFY) of wastewater to offset agricultural or golf course water use, consistent with relevant provisions of the Coastal Act. As stated in Land Use, Open Space and Conservation Element Program 80.1:

The City should implement the proposed wastewater reclamation program to provide an additional 770 acre-feet per year of water supply for agricultural and golf course purposes, thereby relieving the groundwater basin of this demand. Although not presently contemplated, the reclamation program could be expanded to provide additional quantities of reclaimed wastewater.

Program 80.2 calls for new facilities that implement reclamation goals:

The City should provide recharge facilities to collect storm water which normally flows out to sea,



for recharge to groundwater basin. Such recharge programs would allow storage of additional quantities of water in the groundwater basin each year.

While this program does not directly require recharge of treated wastewater, developing percolation ponds (similar to stormwater retention facilities) would be another approach for recharging groundwater. Percolation requires appropriate site conditions that would allow treated wastewater to migrate to deep aquifer storage without being diverted to the ocean or surface waters by the presence of an impermeable soil layer (e.g., clay or bedrock). At this time, an appropriate site has not been identified but it is assumed that potential percolation facilities could be identified during development of the City's Master Reclamation Plan.

Morro Bay is currently mostly dependent on State Water for its long-term supplies (see discussion of groundwater issues in Item 6.B. above), so finding new sources to augment existing supplies is highly desirable. A new WRF is potentially a substantial part of this solution, either by creating a new source of water that can be reclaimed for non-potable uses such as agriculture and landscaping, or potentially by recharging groundwater basins to make existing City wells more reliable.

Methodology. This section describes the assumptions in the analysis and recycled water opportunities available in the region.

Potential Recycled Water Opportunities

The primary uses for recycled water, as discussed in this report, include:

- Direct reuse for irrigation or other applications; and
- Indirect reuse through either streamflow augmentation or groundwater recharge.

The following describes potential sites for the application of recycled water in Morro Bay and the surrounding region. This is based on both a literature review and original research. Our team, led by Michael K. Nunley Associates (MKN), reviewed previous recycled water studies for the City of Morro Bay (City) and Cayucos Sanitary District (CSD) Wastewater Treatment Plant (WWTP), including:

- *Cayucos/Morro Bay Comprehensive Recycled Water Study*, Carollo Engineers, October 1999
- *2012 Recycled Water Feasibility Study*, Dudek, Draft March 9, 2012

These reports investigated the feasibility of implementing a recycled water program. Both studies included identification of potential water reuse opportunities in the Cayucos and Morro Bay areas and review of the water demands and water quality requirements.

In addition, our team conducted original research, reviewing parcels in both the Morro and Chorro Valleys for their potential for irrigated agriculture.

In general, the use of reclaimed water in the region centered on Morro Bay area could be applied to one or more of the following:

- Irrigated Agriculture
- Streamflow Augmentation in Creeks



- Landscaping, Parks, and Golf Courses
- Groundwater Recharge

Each of these has its own water quality requirements, which are summarized in the December 2013 *Options Report*. Of the sites described in the May 2014 *Report on Reclamation*, over 90% would require wastewater treatment to disinfected tertiary levels, including all agricultural irrigation sites; in addition, salt-sensitive crops such as avocados would also need advanced treatment for salt removal. For this report, we intend to focus on the agricultural irrigation opportunities, which comprise the bulk of the sites.

In summary, there are substantial reclamation opportunities in region surrounding the City, mostly concentrated in the Morro Valley in the form of irrigated agriculture (primarily avocados, and also some row crops), but there are also some opportunities in the Chorro Valley as well. There are important though less plentiful opportunities within the City itself as well as in Cayucos, primarily related to landscaping and parks.

Comparative Site Analysis. The following discussion compares the reclamation opportunities related to irrigated agriculture at the two sites.

CMC Wastewater Site

One of the major potential customers that has been identified near CMC is the County's Dairy Creek Golf Course. The CMC WWTP has delivered an average of 188 AFY to Dairy Creek Golf Course over the past 10 years, according to County staff. Based on discussions with County staff, the total water usage at Dairy Creek Golf Course is approximately 250 to 275 AFY. Therefore, only an additional 62 to 87 AFY could be used.

The May 2014 *Report on Reclamation* noted that there were only two major parcels in the Chorro Valley that provided potential targets for agricultural reclamation. That report generally focused on land closer to the City, because the nearest site under consideration in that report (Tri-W) was at the eastern edge of the City, rather than several miles up the valley. In that case, it made little sense to focus on reclamation sites that required extensive infrastructure to be extended upstream and away from the City.

Now, because of the CMC site's relative upstream location compared to what had been analyzed before, it makes more sense to more fully consider the lands between that site and the City.

The CMC site is approximately 6 linear miles from the City of Morro Bay. Chorro Creek traverses the valley between the site and the City. In addition to the two large parcels previously identified (owned by Morro Bay Ranch and the State of California), other portions of this area are within active agricultural use, which present potential opportunities for the use of reclaimed water. In general, these areas include smaller parcels, or small portions of larger parcels, most of which include active irrigated areas less than 15 acres. One parcel includes about 30 active acres, and another might include about 68 acres. These parcels are located in the general vicinity between Canet Road/San Luisito Creek Road and San Bernardo Road, about 3 to 4 miles down the valley from the CMC site, and about 1.5 to 2.5 miles up the valley from the eastern City limit. These reclamation opportunities are at generally lower elevation than the CMC site (which is about 190 feet above sea level), although some irrigated agriculture up Nicola



Ranch Road is at relatively higher elevation (250 to 300 feet).

In all about 545 acres in the Chorro Valley downstream from the CMC are in active irrigation, and have the highest potential for reclamation.

There are also many other properties in the Chorro Valley that are not in agricultural use, but are relatively flat, open, and otherwise exhibit characteristics that make them potential reclamation targets if they were cultivated. This include about 17 smaller parcels (2 to 20 acres in size) either near Chorro Creek Road, San Bernardo Creek Road, Canet Road, or San Luisito Creek Road. Within these parcels, about 128 acres appear suitable for irrigated agriculture. However, many have existing constraints, including onsite residences, small parcel sizes, or in the case of two larger parcels near Chorro Creek owned by the State Department of Fish and Wildlife, may not be suitable for agriculture because of their potential as habitat mitigation sites.

Tables 3 and 4 summarize the potential reclamation opportunities in the Chorro Valley, which are shown on **Figure 5**.

Table 3. Chorro Valley Irrigated Agriculture (or fallow irrigated ag)				
Owner	Parcels	Total Acres	% Irrigated	Irrigated Acres
Morro Bay Ranch	1	303.67	85.0%	258.12
State of California	1	438.93	32.0%	140.46
Roy Jensen *	1	9.78	100%	9.78
Morro Bay Ranch *	1	309.13	5%	15.46
Edward Perry *	1	57.11	5%	2.86
Edward Perry *	1	60.10	50%	30.05
Robert Armstrong *	1	32.13	25%	8.03
State of California (Fish and Wildlife) *	1	252.01	5%	12.60
John Maino *	1	85.74	80%	68.59
TOTAL	9	1,548.60	35.3%	545.95
<i>* Previously unreported parcels are in the vicinity of Canet, San Luisito Creek, or San Bernardo Creek Roads. These were not shown before because they were upstream from the Tri-W site, which was examined in the May 2014 siting study, but are downstream from the CMC site.</i>				

Table 4. Chorro Valley Parcels Not in Crop Production, but with Irrigation Potential				
Owner	Parcels	Total Acres	% Irrigation Potential	Potential Irrigated Acres
<i>Parcels near Chorro Creek Road ¹</i>				
John Pagent	1	10.09	90%	9.08
State of California (Fish and Wildlife)	2	43.97	80%	35.18
Valentina Cottini	1	6.22	80%	4.98
<i>Subtotal</i>	<i>4</i>	<i>60.28</i>		<i>49.23</i>



Table 4. Chorro Valley Parcels Not in Crop Production, but with Irrigation Potential				
Owner	Parcels	Total Acres	% Irrigation Potential	Potential Irrigated Acres
<i>Parcels near Canet, San Luisito Creek, or San Bernardo Creek Roads²</i>				
Randolph Rogers	1	11.54	75%	8.66
George Ross	1	8.37	75%	6.28
Teresa Stoner	1	14.42	75%	10.82
Tony Gaoiran	1	2.92	90%	2.63
Steven Williams	1	11.56	40%	4.62
Karl Schenk	1	3.16	60%	1.90
Domingos Garcia	1	1.94	10%	0.19
Evelyn Caligari	1	20.45	95%	19.43
John Fox	1	2.01	10%	0.20
Michael Ness	1	2.81	90%	2.53
Aaron Bento	1	10.25	90%	9.23
Edward Allred	1	3.22	75%	2.42
Tony Gaoiran	1	13.26	75%	9.95
Subtotal	13	105.91		78.83
TOTAL	17	166.19	77%	128.07
<i>Note: None of these parcels are in active irrigated agriculture, nor appear to have been in the recent past. However, they include open lands that are potential suitable for agricultural production, if the property owner opts to do so.</i> <i>1 The two parcels owned by Cal Fish and Wildlife adjacent to Chorro Creek are large enough, but may not be suitable for irrigated agriculture if they are used for habitat-related mitigation purposes.</i> <i>2 Previously unreported parcels are in the vicinity of Canet, San Luisito Creek, or San Bernardo Creek Roads. These were not shown before because they were upstream from the Tri-W site, which was examined in the May 2014 siting study, but are downstream from the CMC site.</i>				

Rancho Colina Site

The Rancho Colina Site is located in the Morro Valley, which supports extensive irrigated agricultural uses, primarily avocados, but also some citrus and row crops. In 2014, faced with an extended drought and lack of water, many growers severely cut back their avocado trees to reduce pressure on the trees. This effectively reduced their potential short-term productivity of these lands, which will not fully recover until there is a reliable long-term source of water.

Approximately 56 parcels ranging in size up to 450 acres include substantial irrigated portions, the largest of which is about 248 acres on a parcel owned by Morro Ranch Co. LLC. Most irrigated areas within these parcels range from 10 to 35 acres, and are generally planted in avocados. In all, there are about 1,094 acres in the Morro Valley in current or recent irrigated production, the vast majority of which are within about 1.5 miles of the Rancho Colina site, and ranging from 0.1 to 3 miles from the City limits. A few irrigated areas are somewhat farther, up to about 4.5 miles from the City up Highway 41.



Figure 5. Reclamation Opportunities in the Morro and Chorro Valleys



Table 5 summarizes the potential reclamation opportunities in the Morro Valley, which are shown on Figure 1.

Table 5. Morro Valley Irrigated Agriculture				
Owner	Parcels	Total Acres	% Irrigated	Irrigated Acres
Morro Ranch Co. LLC	1	349.46	71.0%	248.12
Morro Creek Ranch	5	345.07	57.2%	197.46
Howard H. Hayashi	2	82.14	95.5%	78.42
Dwain Davis et al	2	449.30	11.6%	52.08
Susan Beasley et al	1	33.15	100.0%	33.15
Mary Flavan	1	43.69	75.0%	32.77
Paul Madonna et al	2	143.80	21.4%	30.72
James Shanley et al	1	111.65	26.2%	29.25
Evangeline D. Parker	2	46.58	50.0%	23.29
Neil R. Nagano et al	1	23.28	100.0%	23.28
Judith E. Hull	2	113.91	18.7%	21.29
Patricia L. Kennedy et al	2	23.66	86.7%	20.50
Randy & Joanne Kann	1	21.06	95.0%	20.01
Manuel S. & Amparo G. Haber	1	19.57	98.0%	19.18
Patrick N. Nagano et al	1	20.10	94.0%	18.89
Richard B. Kitzman et al	1	19.19	92.0%	17.65
Steve J. and Barbara J. Erden	1	19.96	87.0%	17.37
Scott T. Mather et al	1	19.70	86.0%	16.94
Kathleen E. Cirone et al	1	36.09	45.5%	16.42
James M. Dunn Family Ranches	1	361.98	4.5%	16.29
Gary H. Evans	1	151.30	10.0%	15.13
Eileen M. Giannini	2	15.54	90.4%	14.04
William Limon et al	3	14.05	92.9%	13.05
Frederick Harpster Sr.	1	31.35	41.0%	12.85
Larry Johnson et al	1	38.61	27.0%	10.42
Merriam J. Urquhart et al	1	11.11	90.0%	10.00
Teri A. Keyser	1	18.09	54.0%	9.77
Kenneth H. Macintyre et al	1	10.79	90.0%	9.71
Joseph M. Spellacy	2	52.73	17.2%	9.07
Steven B. Victor et al	1	9.89	90.0%	8.90
Lyle C. Foster et al	1	176.35	4.5%	7.94
Gregory J. Frye et al	1	29.10	27.0%	7.86
John J. Heitzenrater et al	1	11.96	58.0%	6.94
Richard P. Sauerwein et al	2	9.70	67.3%	6.53
Dana & Valerie Putnam	1	12.15	33.0%	4.01
Norman A. & Angia M. Martignoni	1	12.26	31.0%	3.80
Richard Lyons	1	9.04	42.0%	3.80
Kurt E. Steinmann	1	15.15	25.0%	3.79
Margaret G. French	1	40.00	6.0%	2.40
Mary Nagano et al	1	1.28	80.0%	1.02



Table 5. Morro Valley Irrigated Agriculture				
Owner	Parcels	Total Acres	% Irrigated	Irrigated Acres
Ronald L. Kennedy et al	1	1.30	30.0%	0.39
TOTAL	56	2,955.09	37.0%	1,094.50
<i>Note: This includes acreage that is potentially irrigated even if currently out of production. For example, in 2014 many avocado growers in the Morro Valley cut their trees because of extreme drought conditions, effectively removing them from production for an estimated 3-5 years after water becomes reliably available.</i>				

The Rancho Colina site stands at an average elevation of about 160 feet above sea level. Most reclamation parcels in the Morro Valley are below this elevation, even some of the areas upstream, since the site sits about 50 vertical feet above the elevation of Morro Creek from a cross-sectional line down the access driveway to the site. Highway 41 reaches an elevation of 160 feet about 0.5 miles from the end of the accessway northeastward on Highway 41, just past Calle La Palta. Generally speaking, irrigated agriculture on the north side of the highway going east from Calle La Palta will be at higher elevation than the Rancho Colina site. On the south side of the highway (closer to Morro Creek), parcels beyond 0.75 miles from the end of the Rancho Colina site access driveway are at higher elevation. Relative elevations are important because less power would be required to provide water to customers who are at lower elevations than the Rancho Colina site. This would result in lower capital and ongoing operating costs and will be one of the considerations during development of the Master Reclamation Plan.

Summary and Conclusions. The following summarizes the major findings of this analysis:

- In all, it is estimated that about 70% of the irrigated agricultural land in the Morro Valley sits at lower elevation than the Rancho Colina site, or about 700 acres, nearly all of which is within two miles of the City, and even closer than that to the WRF site. This compares to about 545 irrigated acres in the Chorro Valley that stand below the elevation of the CMC site, about 3-4 miles downstream from the CMC site, and about 1.5 to 2 miles upstream from the City. Generally, higher elevation difference between water customers and the reclaimed water supply will result in higher capital and power costs.
- In summary, there is about 25% more accessible (lower elevation) irrigated agricultural acreage in the Morro Valley than in the Chorro Valley, and it is generally much closer to both the City limits and the proposed WRF site, which has positive ramifications relative to reclamation pipeline infrastructure cost.
- Overall, while both valleys have substantial irrigable acreage, there are greater opportunities in the Morro Valley, near the Rancho Colina site, as well as greater demand for irrigation water in that valley, which has been historically pumped into overdraft. Based on the water demand estimates presented in the report, nearly all of the City and CSD's reclaimed wastewater could be delivered within a 3 to 4-mile long corridor of Highway 41.

Specific issues related to cost and benefits associated with providing water to agricultural parcels are described in Sections 6.A. and 6.B., which relate to potential regional benefits and comparative costs, respectively.



E. Are there unique regulatory or logistical constraints that may limit potential water supply or reclamation benefits of a regional facility at the CMC site? How does that compare to Rancho Colina?

Why This Issue is Important. A variety of regulatory or logistical challenges could make accessing potential water supply or reclamation benefits potentially problematic. There are legal constraints related to discharging into surface waters, some of which affect accessing potential groundwater supplies. There are minimum streamflow requirements associated with Chorro Creek before water can be accessed for other purposes, imposed to protect habitat within that watershed. Many drainages are protected as Waters of the United States or Waters of the State, the alteration of which would be limited by the conditions of a permit. Water rights are an important issue to consider, as there may be multiple claims on treated water that is produced from a regional facility. Another type of challenge would be legal framework under which a new facility would be built and operated. When multiple partner agencies are involved, an agreement among the agencies would be required. The complexity of such an agreement could adversely affect the timing of project implementation.

Comparative Site Analysis. The following discussion compares the sites with respect to this key issue.

CMC Wastewater Site

Interagency Coordination and Timing. As described in the introduction to this report, other agencies have expressed interest in pursuing a regional facility at the CMC site, notably the RWQCB's Executive Director, the Cayucos Sanitary District, and at one time, San Luis Obispo County Public Works Department. However, the County's interest appears to have waned in the past year, as personnel changed and priorities shifted to other major capital projects.

In recent months, the County has not prioritized the construction of a regional facility, nor has County staff expressed any urgency in doing so. This is underscored by the fact that while County staff has been cooperative with the City in this current study effort, the County expressed no desire to pay for or lead any of the necessary technical studies related to studying the issue. Relative to project timing, in a September 23, 2014 email to City Public Services Director Rob Livick, SLO County Deputy Public Works Director Mark Hutchinson stated that *"transferring all or a portion of the operation of utility services in the Chorro Valley to the County involves a process timeline that far exceeds the timeline established for addressing the current wastewater treatment situation in Morro Bay/Cayucos."* The County's inability to prioritize and provide leadership at this time is problematic for the City if it hopes to achieve its 5-year operational goal, since it will depend on County actions to move the project forward.

A larger issue is that the State Department of Corrections and Rehabilitation (CDCR) does not appear to be interested in the concept at this time. While not averse to the idea in the long-term, CDCR's Fred Cordano explains that for the State to even seriously consider the concept, there would first need to be extensive study and ultimately approval from the State Public Works Board and Department of General Services, in addition to the CDCR. This process would be lengthy, and would likely take at least one to two years, possibly longer.



The fact that there appears to be little current coordination or interest from two of the major players (the State is the current facility owner and operator, and the County would likely become the new operator) presents a major obstacle to realizing this concept in the near future. In addition, current regulations do not permit the State to provide municipal services, so either the County would need to be involved in the operation, or the regulations would need to change. Neither outcome is likely to occur in the near future, especially in the context of the City's stated 5-year goal.

The RWQCB's Executive Officer has pledged support to help facilitate a potential transfer of operations to the County and ultimately the permitting of a regional facility at this location. Nevertheless, the RWQCB's ability to effectively accomplish this is somewhat limited, since they are a regulatory agency charged with permitting and protecting water quality, rather than a municipality or land use authority in the business of operating public works infrastructure and providing municipal services.

The lack of leadership and/or interest at the State or County level for this concept is a major constraint. Even if this could be overcome, a multi-agency agreement relative to the operation of the expanded facility, and ultimately the water supply benefit the results from its operation, would need to be put in place. Such an agreement would need to involve CDCR, the County, the City of Morro Bay, CSD, and other users of the CMC facility. There have been no preliminary discussions among these agencies regarding the nature of such an agreement, which would need to address issues related to the construction, operation, maintenance, the extension of pipeline infrastructure, and allocating fair share costs for capital improvements. It would also need to address water rights, and the amount of reclaimed water that can be used by the various partner agencies. Other potential claimants might include intervening property owners between the CMC site and the City's Chorro Valley wellfield. In addition, the Department of Fish and Wildlife could determine that some or all of an increased streamflow in Chorro Creek would be needed to support potential benefits to aquatic habitat that relies on a reliable water supply. If this is the case, some of the potential perceived benefit to water municipal supplies may not be realized, and it is likely to take a multi-agency agreement to determine the appropriate level of water use for the various agencies. This crucial logistical hurdle will likely take significant time and study before an agreement can be reached.

The City of Morro Bay and CSD currently have a joint agreement to operate the existing City/CSD wastewater treatment plant located in Morro Bay. Very recent efforts to cooperate on a new facility notwithstanding, the fact that the City and CSD embarked on separate paths in 2013 to investigate sites for a new facility underscores that the two agencies' goals may be substantially different, and that it may be difficult to reach a mutual agreement on relative cost-sharing responsibilities at a regional CMC facility.

Overall, interagency coordination issues are a substantial logistical constraint that would affect the City's ability to realize any water supply and/or reclamation benefits from a regional facility at the CMC site, and would adversely affect the City's 5-year goal.

Water Rights. Water rights would be a significant concern for development at the Regional CMC site. Agreements among the City, CDCR, CSD, and other wastewater customers of the CMC facility would be required to protect the City's ability to withdraw their discharge at their Chorro Valley wells. Based on a preliminary review, it appears the City may be able to obtain a permit or rights for ownership of the water that it would introduce to Chorro Creek (and the City's wellfields) via the WWTP outfall.



The ownership of CSD's wastewater, and other wastewater, may also be claimed by each of those agencies and use by the City will likely require agreements.

Once this additional water is regularly applied to the creek, and riparian habitat is enhanced by higher year-round flows, resource agencies may prevent the City from withdrawing this flow for other reuse opportunities similar to the requirements imposed on the City of San Luis Obispo and the discharges to San Luis Obispo Creek from their Water Resource Recovery Facility.

Streamflow Discharge Requirements and Limitations. Section 6.H. discusses discharge requirements for Chorro Creek. As described in the LWA Report, discharge to Chorro Creek represents the most challenging and highest future regulatory risk of the proposed discharge methods and locations (ocean outfall, percolation ponds, Morro Creek, and Chorro Creek).

Caltrans Encroachment. Development of a new WRF would not affect nor encroach upon Caltrans property. However, some of the pipeline infrastructure between the site and the City may need to be constructed adjacent to Caltrans right-of-way (Highway 1), either for conveying wastewater from the City, or to distribute recycled water to potential users in the region. This would require working cooperatively with Caltrans and the need to acquire an encroachment permit.

A proposed regional bike path route has been identified that could serve as an alignment for a raw sewage force main to CMC. This route would minimize the need for encroachment permits from Caltrans. This alignment is shown on **Figure 6**.

Environmental and Other Regulatory Permitting. In general, there is little difference in the environmental permitting steps involved at the CMC site and the Rancho Colina site. The basic steps include site and pipeline easement acquisition, a preliminary project design, CEQA evaluation, other regulatory agency permitting requirements, revised project design that responds to the CEQA and permitting process, City and Coastal Commission approval, and construction.

All project-related activities must be considered in the CEQA document for this project (likely an Environmental Impact Report or EIR). This would include steps ranging from property acquisition, property design, grading, construction and operation. The facility planning and preliminary design must be completed before CEQA so that project definition is developed in sufficient detail for thorough environmental impact analyses. While the CEQA process and must be completed before resource agency permitting can be completed (since resource agencies will rely on the CEQA document), the permit process can be initiated during the CEQA process, which should likely save some time in the overall project implementation timeframe.

Note that if federal funding is involved, the project would also be subject to the requirements of the federal National Environmental Policy Act (NEPA). If so, the project could be evaluated in a joint CEQA/NEPA document, but this would likely take more time than if the project were subject only to CEQA.



Figure 6. Possible Pipeline Alignment from CMC Site to City of Morro Bay



The site is sufficiently large to be able to locate the new WRF outside Waters of the United States, Waters of the State of California, and other resources under federal or state regulatory protection. However, discharge into Chorro Creek as part of the reclamation effort will require a permit that complies with the RWQCB Waste Discharge regulations.

Other key permitting agencies potentially include the U.S. Army Corps of Engineers (pursuant to Section 404 of the Clean Water Act), Regional Water Quality Control Board (NPDES permit; meeting Porter-Cologne Act requirements; Section 401 certification), California Department of Fish and Wildlife (Streambed Alteration Agreement). Although the permit process for these actions may be initiated during the CEQA process, their completion will depend to a large extent on agency evaluation and acceptance of the final CEQA document. If there are disagreements between permitting agencies and the City, it may require additional supplemental CEQA studies to satisfy resource permitting agency concerns.

As described in the *Options Report*, other key permitting agencies for this site include:

- California Environmental Protection Agency, Department of Toxic Substances Control (Site Assessment / Remedial Action Plan)
- California Coastal Commission / San Luis Obispo County Department of Planning & Building (Local Coastal Plan Amendment)
- California Department of Transportation (Caltrans Encroachment Permit)
- San Luis Obispo County Air Pollution Control District (SLOCAPCD)

In addition, several site surveys, studies and other activities will be needed in support of the permit application and CEQA process. These are the likely studies needed at this site:

- Jurisdictional Determination (Waters of the United States and State of California)
- Focused Special-Status Species Surveys
- Biological Assessment
- Prepare Habitat Mitigation and Monitoring Plan (if any)
- Hydrologic and Hydraulic Analysis
- Phase I Archeological Survey (Section 106)
- Phase I / II Site Assessment
- Site Remediation (if necessary as a result of the Phase I/II Site Assessment)
- Air Quality Tech Report
- CDP/CUP Permit Application Review
- CEQA Documentation

The final step in the regulatory process, which depend on the completion of the above steps, include:

- LCP Amendment



Rancho Colina Site

Interagency Coordination and Timing. The Rancho Colina site is privately-owned, and the property owner has expressed a high level of interest in working with the City to develop a new WRF at this location. Thus, it is possible to design and construct a facility at this location without the need to enter into any cooperative agreements with partner agencies, including the State or County. In the event that Cayucos Sanitary District wishes to work with the City to build, operate, and maintain the facility, or simply to be a customer of the City to serve the needs of the CSD, a framework for an agreement between the two agencies would need to be developed. The fact that there is already a framework for an agreement at the existing WWTP, and that both agencies have recently expressed the desire to work cooperatively at whatever location is chosen, suggests that such an agreement can be reached.

Interagency coordination issues at this location do not pose a substantial constraint.

Water Rights. As at CMC, water rights would be a significant concern for development at Rancho Colina. In this case, however, the County and State would not be parties to such an agreement, and there are substantially fewer property owners in the Morro Valley between the site and the City who might have claim to water discharged into Morro Creek, since it is much closer to the City.

Streamflow Discharge Requirements and Limitations. There is currently no minimum streamflow requirement for Morro Creek, although there is the potential, as with Chorro Creek, for the Department of Fish and Wildlife to require a minimum flow for the purpose of maintaining aquatic habitat if that agency determines that there is a potential benefit to habitat. While an agreement for the use of water discharged to Morro Creek would likely be needed, such an agreement would likely be less complex than one for Chorro Creek, for the reasons described above.

Section 6.H. of this report discusses possible discharge requirements for Morro Creek.

In Morro Valley, reclaimed water could be put into percolation ponds, or be used directly on agricultural parcels rather than discharged into Morro Creek. At this time, no studies have been conducted to identify appropriate sites for percolation so it is unknown if percolation is a viable option. This will be explored in the Master Reclamation Plan. If this approach were used, then there would be no need to enter into a multi-party agreement related to surface water rights. This approach would be logistically much less complex than an agreement that would need to be reached at the CMC site.

Caltrans Encroachment. As at CMC, development of a new WRF at Rancho Colina would not affect nor encroach upon Caltrans property. However, some of the pipeline infrastructure between the site and the City may need to be constructed adjacent to Caltrans right-of-way (Highway 41), either for conveying wastewater from the City, or to distribute recycled water to potential users in the region. As at CMC, this would require working cooperatively with Caltrans and the need to acquire an encroachment permit.

Environmental and Other Regulatory Permitting. In general, there is little difference in the environmental permitting steps involved at the CMC site and the Rancho Colina site. Please see the discussion under the CMC site. One addition step at the Rancho Colina site would potentially be annexation approval from the San Luis Obispo Local Agency Formation Commission (LAFCo), if the site is



to be annexed to the City. This process would not substantially affect the schedule, if consultation with LAFCo is begun early in the process, and fully addressed in the CEQA document.

Summary and Conclusions. There are substantially more logistical and regulatory constraints at the CMC site related to the development and operation of a new WRF, as well as to realizing potential water supply or reclamation benefits for the City. These are summarized below:

- The transfer of operations of the current facility from the State (CDCR) to the County;
- CDCR's current lack of interest in effecting a transfer since this would not be major, long-term program that would not meet any agency goals or priorities, as confirmed by CDCR staff;
- The fact that multiple state agencies would need to study and approve a potential transfer and involvement of municipal customers such as Morro Bay and CSD, which will take considerable time;
- The County's low prioritization of a regional WRF coupled with lack of staff availability in leading the effort to investigate and operate a regional facility;
- The need to establish a multi-party agreement among potential water supply beneficiaries for reclaimed water that is discharged to Chorro Creek;
- A lack of a coordinated effort and differing goals between the City of Morro Bay and CSD relative to moving forward with a new WRF; and
- The fact that the four potential partner agencies have not engaged in any preliminary coordination efforts toward a potential working framework, an effort that would need to be led by the County.
- Collectively, these interagency logistical issues present significant challenges, and raise substantial concerns that a new regional facility can be built and operated at the CMC site in the framework of the City's goals related to timing, water supply benefits, and reclamation.

Development at Rancho Colina faces significantly fewer and far less complex logistical or regulatory challenges. Key findings include:

- The possible need to establish a multi-party agreement among potential water supply beneficiaries for reclaimed water that is discharged to Morro Creek, if reclaimed water is not stored in percolation ponds or offsite ponds for potential agricultural use;
- Pipeline infrastructure associated with the project that may be within Caltrans rights-of-way would require an encroachment permit from that agency.
- Close proximity to the existing ocean outfall for use in the event there is an emergency need and for brine disposal to meet customers' salt objectives.



- Overall, the Rancho Colina site can be much more realistically accomplished within the framework of the City's goals related to timing, water supply benefits, and reclamation potential.

F. Are there physical site constraints at CMC that may limit project design flexibility? Will a regional facility likely be an expansion of the existing facility or will an entirely new facility be required?

Why This Issue is Important.

Methodology.

Comparative Site Analysis. The following discussion compares the sites with respect to this key issue.

CMC Wastewater Site

[INCLUDE SUMMARY OF CAROLLO ANALYSIS AND RESULTS]

Rancho Colina Site

[INCLUDE SUMMARY OF MKN ANALYSIS AND RESULTS]

Summary and Conclusions.

G. What are the environmental issues that may be of concern to the Coastal Commission or the general public at the CMC site as compared to Rancho Colina?

Why This Issue is Important. The California Coastal Commission denied the development of a new WRF at the location of the existing WWTP largely because of its potential inconsistency with Coastal Act and LCP policies. These were discussed in extensive detail in the *Options Report*. A project that is consistent with Coastal policies would achieve the following:

- *Avoid Coastal Hazards*



- *Avoid Steep Slopes and High Elevation*
- *Promote Public Access/Recreation*
- *Minimize Visual Impacts*
- *Sustainable Use of Public Resources*
- *Avoid Environmentally Sensitive Habitat Areas (ESHA)*
- *Avoid Cultural Resources*
- *Avoid Agricultural Resources*
- *Promote Coastal Dependent Development*
- *Minimize Greenhouse Gas Emissions*

Comparative Site Analysis. The following discussion compares the sites with respect to this key issue.

CMC Wastewater Site

Both sites are in the Coastal Zone, so both will require approval of the Coastal Commission. The CMC site is far from the ocean, so coastal issues related to access, visual impacts and coastal hazards do not apply. At the same time, the CMC site assumes that reclaimed water would be discharged in to Chorro Creek, which drains directly into the Morro Bay estuary. Thus, the Coastal Commission will look closely at issues related to the health of the estuary, which is addressed to a large extent by the RWQCB's discharge permit requirements and TMDLs prepared for Chorro Creek.

A site-specific analysis of key coastal issues is included below.

Coastal Proximity and Access. The site is about 4.7 miles from the Morro Bay estuary, and about 6.5 miles from the ocean, separated from all coastal features by intervening topography. The site is between 180 and 230 feet above sea level. It is not subject to coastal hazards such as tsunami and possible sea-level rise. A project at this location would not impede coastal access, or otherwise affect future development along the coastline.

Visual Impacts. There are no visual impacts relative to the coast, since the site cannot be seen from the ocean or estuary, nor would development on the site block views of these features. The most developable portion of the site is about 0.6 miles from Highway 1, and can be seen from a short segment of that roadway. However, intervening structures on the Cuesta College campus, as well as trees associated with drainages near the site would likely screen the facility to a large extent. Visual impacts from public viewing areas would be minimal, and no constraints to development at this site are anticipated.

Biological Resources/ESHA. ESHA is designated on the northern portion of site associated with Chorro Creek pursuant to the County's LCP; however, this consists of a small portion of the overall site, and can be avoided through design. The site is not identified in the County's General Plan under its "Sensitive Resource Area" Combining Designation.

Based on a search of the California Natural Diversity Data base (CNDDB), the following special status species have the potential for occurring on this site (list status shown in parentheses):



Plants

- Arroyo de la cruz manzanita (1B.2)
- Miles' milk vetch (1B.2)
- San Joaquin spearscale (1B.2)
- LaPanza mariposa lily (1B.2)
- Cambria morning glory (4.2)
- San Luis Obispo sedge (1B.2)
- San Luis Obispo owl's clover (1B.2)
- Congdon's tarplant (1B.2) (CNDDDB onsite occurrence recorded)
- Brewer's spineflower (1B.3)
- Betty's dudleya (1B.2)
- Mouse-gray dudleya (1B.2)
- Blochman's dudleya (1B.2)
- Jones' layia (1B.2)
- San Luis Obispo modarella (1B.2)
- Adobe sanicle (1B.1)
- Most beautiful jewel flower (1B.2)

Invertebrates

- San Luis Obispo pyrg (SA)

Fish (in Chorro Creek, not on site itself)

- Tidewater goby (FE, CSC)
- Steelhead (FT, CSC) (CNDDDB onsite occurrence recorded)

Amphibians

- California red-legged frog (FT, CSC)

Reptiles

- Silvery legless lizard (CSC)
- Pacific pond turtle (CSC)
- Blainville's horned lizard (CSC)

Birds (none)

Mammals (none)

The CMC site has not been surveyed for biological resources, so if this site were selected, and expansion of the existing facility would include areas not currently developed, surveys to determine the presence or absence of the potentially occurring special status species would be required.

Cultural Resources. In general, the Chorro Valley has potential for encountering cultural resources because of its proximity to Chorro Creek, and the fact that the area has a long history of human habitation. However, most of the site has been previously disturbed. The area is not included in the County's "Archaeological Sensitive Area" Combining Designation, which suggests that the area does not have the highest level of sensitivity.

In previous surveys, two prehistoric resources were found: a buried shell midden, and a scatter of chipped stone artifacts. There was also one historic trash dump. As noted in the Rough Screening Evaluation, the entire site may have been surveyed, but that has not been confirmed.

Because of the site's relatively high sensitivity, the possibility of encountering additional cultural resources on this property cannot be discounted.

Agriculture. The site is disturbed and has been previously developed. However, the westernmost 40 acres of the property have been used for agricultural purposes, and designated as AG



under the County's General Plan. This area also coincides with one of the best locations on which an expanded or new facility could be built, although it is possible to construct between the tributary drainages in the western portion of the site, though the potential configuration of the facility may be more limited because of the need to setback from riparian area. This might have design implications if the project were constructed as a large regional facility shared with other agencies.

The entire site is designated as prime farmland if irrigated, except the areas within Chorro Creek or its tributary drainages. This site is not under Williamson Act (LCA) Contract.

LCP Policies 1, 2, and 3 require that agricultural lands be maintained unless there are circumstances in and around existing urban areas that make agriculture infeasible or that would make conversion of the land to a non-agricultural use a logical land use change to better protect agricultural lands and strengthen the urban-rural boundary; that agricultural lands should not be subdivided unless such division would maintain or enhance agriculture; and, that non-agricultural uses should not be allowed except under limited circumstances, including in terms of supplemental non-agricultural uses where supplemental income is required for the continuation of agricultural use and 98% of the land is restricted for and maintained in agriculture. However, CZLUO Section 23.08.288, and Coastal Table "O", of the Land Use Element provide for the development of Public Facilities such as contemplated with the new WRF.

The County LCP allows for the siting of public utilities on agriculturally zoned property, partly from the recognition that agriculture uses are not an incompatible land use adjacent to a wastewater treatment or water reclamation facility. These uses can co-exist, without pressure from either one for limitations or restrictions on activities. As such, the plant would not be anticipated to result in the conversion of other lands with agricultural potential for public utility use on the property.

Overall, impacts to prime agricultural lands cannot be avoided, but it is worth noting that this site that much of the site has been previously disturbed, and the potential conversion of prime soils would not substantially impact agricultural production either onsite or offsite.

Minimize Greenhouse Gas Emissions. Construction and operation of public works facilities can increase GHG emissions and therefore the effects of global climate change. Energy (electricity) use during operation of the treatment plant, and lift stations and pumps used convey effluent from the facility, would generate GHG emissions. Although the pumps would not directly result in GHG emissions, use of pumps would indirectly release GHG emissions through the purchase/use of electricity.

This site has not been previously evaluated, and such an evaluation is beyond the scope of this study.

It can be said with some certainty, however, that this site is located substantially farther away from the City's sewer collection system, which currently convenes at the existing WWTP site, and is located at a higher elevation, and therefore would release a greater amount of GHG emissions compared to the Rancho Colina site due to additional energy demands to move wastewater to the site for treatment and eventual disposal.

Rancho Colina Site



Coastal Proximity and Access. The site is about 1.7 miles from the ocean, and separated by intervening topography. It is not subject to coastal hazards such as tsunami and possible sea-level rise. A project at this location would not impede coastal access, or otherwise affect future development along the coastline.

Visual Impacts. There are no visual impacts relative to the coast, since the site cannot be seen from the ocean or estuary, nor would development on the site block views of these features. The most developable portion of the site is about 600 feet from Highway 41, and can be seen from a short segment of that roadway, for less than one-quarter mile nearest the property. It is not in the direct line of viewing for motorists traveling on that highway. The site of potential development is about 1,000 feet northeast of the Rancho Colina residential complex, but is not visible from homes within Rancho Colina because of intervening topography.

Biological Resources/ESHA. The site does not contain any designated Environmentally Sensitive Habitat Area (ESHA) per the County's LCP. The nearest ESHA is along the riparian margins of Morro Creek, but that is outside of the WRF development area. No special status species have been identified on the site, though the following species are identified as having the potential to occur on the site (list status shown in parentheses):

Plants

- San Joaquin spearscale (1B.2)
- LaPanza mariposa lily (1B.2)
- Cambria morning glory (4.2)
- San Luis Obispo sedge (1B.2)
- San Luis Obispo owl's clover (1B.2)
- Congdon's tarplant (1B.2)
- Betty's dudleya (1B.2)
- Mouse gray dudleya (1B.2)
- Blochman's dudleya (1B.2)
- Jones' layia (1B.2)
- Adobe sanicle (1B.1)
- Most beautiful jewel flower (1B.2)

Invertebrates (none)

Fish (in Morro Creek; not on the site itself)

- Tidewater goby (FE, CSC)
- Steelhead (FT, CSC) (CNDDDB onsite occurrence recorded)

Amphibians in and adjacent to Morro Creek, not likely on the upland portion of the site)

- California red-legged frog (FT, CSC)

Reptiles

- Silvery legless lizard (CSC)
- Pacific pond turtle (CSC)
- Blainville's horned lizard (CSC)

Birds (none)

Mammals (none)

Cultural Resources. No cultural resources have been previously identified on the most developable portions of the site. In general, the portions of the Morro Valley nearest to Morro Creek have a fairly high potential for encountering cultural resources, and the fact that the area has a long



history of human habitation. The presence of Morro Creek along the southern boundary of the site (and throughout much of the Morro Valley in general) would have represented an attractive food resource for prehistoric populations migrating between the coast and the interior areas. Many properties within Morro Valley feature prominent ridgelines that are known to have been attractive for hunting camps and temporary activity areas. The potential for encountering such resources diminishes with elevation and with distance from the coast. The potential for encountering unknown resources on this site is considered low to moderate (Applied Earthworks, informal evaluation, March 2014).

However, the area in the general vicinity of Highway 41 near its intersection with Highway 1 is considered highly sensitive, and a large cultural resource site has been recorded in that area (CA-SLO-165). The site has been surveyed many times since 1983, in conjunction with different developments and roadway projects that have occurred in that area. The various investigations uncovered a variety of subsurface artifacts, indicating an area of extensive prehistoric human habitation (Far Western Anthropological Research Group, 1998).

While this area is about 1.2 miles from the Rancho Colina site, it is in the direct path through which pipeline infrastructure to serve the site would need to be extended, both for the purpose of conveying untreated wastewater, and for conveying excess wet-weather treated wastewater to the ocean outfall for disposal. Before the pipeline route is finalized, the area should be surveyed again, with mitigation applied as appropriate, to minimize potential impacts to this resource.

Agriculture. Much of the land in Morro Valley features gently rolling hillsides trending to steeper topography to the north, particularly north of Highway 41. Most of this area is in rangeland, although some of this land supports avocado orchards. There are no prime soils on or near the most developable portions of the site.

The most developable portion of the Rancho Colina site (where the current wastewater treatment facility is located) is underlain by Los Osos-Diablo complex soils, which consist of loamy top layer overlying clay, sandy loam and bedrock, which is typically found at a depth of 39 to 59 inches (NRCS Soil Survey). It is not considered prime farmland by the NRCS, with a land capability classification of 6e. These soils are well-drained, and not prone to flooding or ponding. The depth to the water table is typically greater than 80 inches.

The steeper slopes above the more level area consist of Diablo and Cibo clays, which consist of clay over weathered bedrock, which is typically encountered at a depth of 58 to 68 inches below the surface. It is not considered prime farmland by the NRCS, with a land capability classification of 6e. These soils are well-drained, and not prone to flooding or ponding. The depth to the water table is typically greater than 80 inches.

The portion of the property just to the east of the current treatment facility and toward Highway 41 is Marimel silty clay loam, which consists of silty clay loam stratified loam and/or clay loam. This soil is considered prime farmland if irrigated, though it is not currently nor has it historically been irrigated on this property. Therefore, this property does not support prime farmland. The soil has a land classification of 1 (if irrigated), and 3c (if nonirrigated).

The potential development of a new WRF would not preclude continued agricultural uses on the property, which consists of grazing. Grazing land (uphill of the existing treatment plant site) has historically been provided from treated wastewater from the existing plant.



Minimize Greenhouse Gas Emissions. Energy (electricity) use during operation of the new facility, and lift stations and pumps used convey effluent from the facility, would generate GHG emissions. Although the pumps would not directly result in GHG emissions, use of pumps would indirectly release GHG emissions through the purchase/use of electricity. The site is located about 1.7 miles from the existing ocean outfall, and it is expected that the new WRF would need to tie into the existing infrastructure network at this location, with lift stations needed to pump wastewater uphill to the new site, which is at an elevation of about 150 to 160 feet.

Summary and Conclusions. The following summarizes the major conclusions of this analysis:

- Overall, neither site has a particular advantage from the standpoint of environmental issues that may be of concern to the Coastal Commission.
- Each site is far from the coast and separated by intervening topography, so a new WRF at either location will not be visible from the coast or block coastal access.
- Neither site is subject to coastal hazards because of their elevation and distance from the ocean or estuary.
- The most developable portions of both sites do not contain designated ESHA, although there is ESHA on the margins of both Chorro and Morro Creek.
- The entire CMC site is considered prime farmland, although the existing wastewater plant location is not in agricultural production. The most developable portion of the Rancho Colina site does not contain prime soils, although the lower portion of the property is considered prime if irrigated and drained. The Rancho Colina site supports grazing activities.
- Neither site supports known cultural resources, but there is the potential to do so at either location because of known prehistoric human habitation in the area. Pipeline infrastructure from the Rancho Colina site would traverse a known cultural resource site, CA-SLO-165, which may result in impacts that require mitigation.
- The Rancho Colina site is substantially closer to the City's existing infrastructure network than the CMC site, and thus development at that location may use somewhat less energy—which translates into lower greenhouse gas emissions.

H. How will the discharge limitations and design goals of the treatment facility differ at the CMC and Rancho Colina sites? How will the treatment facilities differ as a result?

Why This Issue is Important. This issue is important because discharge limitations and



permitting constraints have a bearing on potential project design, which in turn has cost ramifications. The cost issues discussed in Section 6.A. are based in part on limitation discussed below.

Methodology. Larry Walker Associates (LWA) performed an analysis of discharge permitting constraints for Morro Creek, Chorro Creek, percolation in Morro Valley, and the ocean outfall. See **Appendix E** for the complete LWA report, the major relevant points of which are summarized below. The analysis did not address water rights, potential issues with aquatic or riparian habitat, or other issues outside of National Pollutant Discharge Elimination System (NPDES) permitting for plant effluent.

The JFR project team had previously evaluated water quality and permitting requirements for Title 22 water reuse regulations in the *Report on Reclamation and Council Recommended WRF Sites* (May 2014).

Comparative Site Analysis. The following discussion compares the discharge limitations that could affect design goals at the two sites.

CMC Wastewater Site

In its Discharge Options report, LWA evaluated the current CMC permit, current SWRCB and federal policies, and pending policies that could affect treatment feasibility and costs at the CMC Regional Site. LWA and the JFR project team concluded the following relative to the site:

- The existing discharge permit at CMC includes limits for TDS at 500 mg/L and a daily total nitrogen limit of 10 mg/L. Based on discussions with RWQCB staff, this is one of the most stringent nitrogen limits in San Luis Obispo County since it is a daily limit, not a monthly average as in the existing San Luis Obispo and Paso Robles permits. Adding service to Morro Bay and Cayucos will require an upgrade of the plant process to perform TDS removal since their wastewater exceeds 900 mg/L. The nitrogen and TDS limits require facilities such as biological nutrient removal basins and microfiltration with reverse osmosis that are not required by Title 22 regulations for direct reuse of wastewater for irrigation.
- The existing discharge permit also includes limits for trihalomethanes in the plant effluent. This drove the recent upgrade from chlorine contact basins to ultraviolet radiation.
- Discharge to Chorro Creek is accompanied by the highest regulatory burden and regulatory risk when compared with Title 22 direct reuse of wastewater, ocean outfall, Morro Creek discharge, or percolation ponds.
- Chorro Creek is listed as an impaired water body for nutrients (nitrogen and phosphorus), pathogens, and sediment under the federal Clean Water Act.
- Both the State Policy on Nutrients and the State's Implementation Plan for Biological Integrity are likely to result in more stringent nutrient levels (nitrogen and phosphorus) for streams and enclosed estuaries. Eventual thresholds for nitrogen are likely to be in the vicinity of 1.0 mg/L total nitrogen (whereas the current CMC discharge limit is 10.0 mg/L) and total phosphorus will be approximately 0.1 mg/L. The existing permit only requires orthophosphorus levels to remain at 2004-2005 levels between May and November, with no stated numerical limit. According to



the permit, median May-Sept concentrations were approximately 2.4 mg/L. New nutrient limitations will require upgrading the CMC facility.

- Increased discharges could be scrutinized by regulatory agencies (such as NOAA Fisheries and California Department of Forestry and Wildlife) since the creek is upstream of a high-profile, state-protected estuary of national significance that provides habitat for dozens of federally- and state-listed species.
- Introducing new flows could affect habitat and complicate efforts to redirect discharge in the future if direct potable reuse or other direct reuse alternatives are identified. For example, the City of San Luis Obispo cannot fully utilize the reclaimed water generated as part of their Water Reclamation Facility since they are required to maintain a minimum flow of 2.5 cfs in San Luis Obispo Creek for in-stream beneficial uses. The CMC facility is required to maintain 0.75 cfs in Chorro Creek but this number may increase, in the future, if more flow is available year-round to enhance aquatic and riparian habitat.
- The CMC discharge permit has a 5-year limit and any new regulations will be applied when that permit is renewed.

Rancho Colina Site

Elements of the LWA Report and JFR analysis are summarized below for the Rancho Colina site:

- The discharge permitting through RWQCB for direct reuse to agricultural users, coupled with the ocean outfall as a possible wet weather disposal option and/or percolation pond disposal if an appropriate site is identified, will result in fewer effluent permit limitations and less risk of increased regulation in the future, as opposed to a Chorro Creek discharge as described in the Effluent Disposal Analysis (LWA, 2014).
- In particular, the effluent TN and TDS limits would not be imposed on the Rancho Colina site unless a discharge to Morro Creek was proposed as part of that project. These parameters result in higher capital and operating costs at the CMC Site. TDS removal from a percentage of the wastewater flow may be necessary to improve effluent quality for avocados, however, even though it would not be a regulatory requirement.
- If a discharge to Morro Creek were proposed as part of the project, permitting constraints (including nutrient limits and toxicity limits) would be more significant than those for direct irrigation use, ocean outfall or percolation. However, Chorro Creek would have more stringent regulatory requirements since it is an impaired water body and is located upstream of the Morro Bay National Estuary as discussed in the Discharge Options report (LWA, 2014).
- Discharge to Morro Creek and/or the ocean outfall would result in issuance of an NPDES permit that would be renewed every five (5) years, similar to the CMC discharge permit.
- The project could indirectly increase the amount of streamflow available for riparian habitat, but is less likely to face opposition from resource agencies if recycled water is diverted to other uses in the future. The level of flexibility for pursuing new reuse opportunities in the future,



including other reuse opportunities or direct potable reuse, is expected to be considerably higher for this project since the benefit to streamflow is indirect.

Summary and Conclusions. The following conclusions can be reached specific to the anticipated plant discharge permit at both sites based on the analysis presented above:

- Overall, the CMC site presents greater permitting challenges than development at the Rancho Colina site, which will have a direct adverse impact on the cost of the facility at that location.
- The CMC wastewater treatment plant discharge presents the most stringent regulatory requirements and greatest risk for additional requirements in the future. These have a direct impact on the cost to construct and operate the treatment facility, in addition to the City's ability to anticipate and plan for future costs.
- Stakeholders such as the Morro Bay National Estuary Program and regulatory agencies with jurisdiction over aquatic habitat and endangered species must be consulted prior to planning an expansion at CMC. Their input could impact permitting requirements, as well as ability to redirect treated effluent in the future if a different direct reuse opportunity is identified (for example, the City of San Luis Obispo's attempts to expand its recycled water program).
- A Rancho Colina facility that incorporates direct reuse of treated water with wet weather disposal through the ocean outfall (or via percolation ponds if appropriate sites are identified) presents the least discharge permit challenges and requires fewer onsite plant treatment facilities.
- A recycled water program (including agreements with users, capital investment in pumping and pipelines, and ongoing operation and maintenance) that complies with Title 22 requirements will be required to implement this strategy and must be factored into the site selection decision. The current recommendation, in order to comply with the City Council's 5-year timeline, is to work on this long-term planning and design effort in concert with planning, design, and construction of the Phase 1 WRF project if the Rancho Colina site is selected.

Please refer to Table 6 in Section 7 of this report, *Summary and Conclusions*, for a locational comparison of all water resource-related issues, including those discussed in this portion of the analysis.

I. Is the City's 5-Year timeframe goal achievable at either the CMC or Rancho Colina site? What studies, permitting requirements, or logistical challenges may affect achieving this goal?

Why This Issue is Important. The City Council established a goal to have the new WRF operational within five years of a final site selection, in order to ensure the maximum protection of



water quality and the ability to augment existing water supplies with reclaimed water as quickly as possible.

Methodology. The major obstacles to achieving the 5-year timeframe at any location relate to several factors, only some of which are related to the sites themselves. The key site-related factors include several issues already discussed in this report, notably:

1. *Minimizing logistical constraints associated with property ownership and developing a workable multi-agency framework for the design, construction, and operation of the facility*
2. *Finding a site that minimizes permitting challenges and regulatory constraints;*
3. *Finding a site that minimizes costs, in order to minimize challenges associated with funding the project.*

Most of these factors were previously analyzed in the *Options Report*, and some are carried further in this report. The issue of relative cost is discussed earlier in this report.

There are also several other factors not related to any of the sites themselves, which include but are not limited to: effective project management; the approach to bid process; consultant performance in the design and construction of the facility; developing a management framework with partner agencies, if any; completing and implementation an achievable reclamation plan; the degree of cooperation from regulatory agencies, including the Coastal Commission; and the level of public controversy.

While important, these factors are not analyzed in this report, because they do not directly pertain to the selection of one or another site.

Comparative Site Analysis. The following discussion compares issues related to the achievement of the City's 5-year goal at either site.

CMC Wastewater Site

This site has the following suitability characteristics for each of the issues identified above:

Logistical Constraints. The site is owned by the State of California Department of Corrections and Rehabilitation. As noted in Section 6.E. above, CDCR has not indicated any specific interest in pursuing an expanded regional facility at this location. In addition, working with the State would require complex approvals from multiple state agencies, including the State Public Works Board and department of General Services before the potential pursuit of this site could be considered, a process that would take significant time and study. Further, the State cannot provide municipal services by itself, but would require the County to operate the facility to do so. At this time, the County's Public Works Department does not consider this project to be a high priority.

Development at this location would require a complex series of approvals from multiple state agencies and San Luis Obispo County, and then would require a multi-party operations agreement among CDCR, the County, Morro Bay and CSD. These agencies would also have to agree on water rights issues relative to the potential distribution and use of reclaimed water. Finally, CDCR has indicated that it would only own the WRF site itself, but the responsibility for extending pipelines to Morro Bay and CSD would be he



responsibility of those agencies. This would have to be considered in the cost-sharing framework and long-term operations and maintenance of the overall facility/reclamation system.

Overall, the State's ownership of the site, the fact that the County has not prioritized this project, and the need for complex multi-agency agreements on a variety of issues present a substantial constraints, and realistically preclude the achievement of the City's 5-year goal.

Permitting and Regulatory Constraints. While issues that may be of concern to the Coastal Commission are similar to those for Rancho Colina, and the CEQA process somewhat similar, the permitting requirements for this site may be somewhat more complex because of the State's ownership of the site, and the need to involve and gain approvals of multiple agencies, including San Luis Obispo County. Please refer to Sections 6.E. and 6.G. above for further discussion of this issue.

Cost and Funding Constraints. Please refer to Section 6.B. above for further discussion of cost issues. Relative to potential funding, there does not appear to be any comparative advantage relative to securing potential funding (grants or loans) for a facility at this site. Please refer to Section 6.K. for further discussion of this issue.

Rancho Colina Site

This site has the following suitability characteristics for each of the issues identified above:

Logistical Constraints. The site is owned by a private individual who has indicated a high degree of willingness to work with the City to develop a new WRF at this location. The potential design, construction and operation of a facility at this site would be considerably less complex and time-consuming to achieve, because neither the State nor the County are involved in the ownership or potential operation of the facility.

If the CSD were included as a partner, development and operation at this location would require an agreement between the City and CSD, which would also need to include a cost-sharing framework. These agencies would also have to agree on water rights issues relative to the potential distribution and use of reclaimed water. Please see Section 6.E. above for further discussion of this issue.

Permitting and Regulatory Constraints. While issues that may be of concern to the Coastal Commission are similar to those for the CMC site, and the CEQA process somewhat similar, the permitting requirements for this site may be somewhat less complex because of the State is not involved in the ownership, nor would there be a potential transfer of operations of the site to the County, as would be the case at CMC. Please refer to Sections 6.E. and 6.G. above for further discussion of this issue.

Cost and Funding Constraints. Please refer to Section 6.B. above for further discussion of cost issues. Relative to potential funding, there does not appear to be any comparative advantage relative to securing potential funding (grants or loans) for a facility at this site. Please refer to Section 6.K. for further discussion of this issue.



Summary and Conclusions. The following summarizes the major findings of the analysis related to this issue:

- Because of a variety of logistical constraints, it is not realistically possible to achieve the City's 5-year goal at the CMC site.
- At the Rancho Colina Site, because of a willing and cooperative property owner, and the fact that neither the State nor the County would be involved in the ownership or operation of the facility, the City's 5-year goal may be achievable.

J. What would the City's role be in constructing and operating a regional facility at CMC? How will an interagency framework affect the City's ability to achieve its stated goals?

Why This Issue is Important. City workshops and subsequent direction by Council established that several goals (in addition to cost-related objectives) were important to the City, including design, environmental benefits, energy efficiency and generation, and reuse of biosolids among others. The degree to which the City has control over the facility would affect the City's ability to realize these goals. Ultimately, the agency that controls design, construction, and operation of the facility will have greater control over the goals of the facility, whether that is the City (or partnership with CSD) at Rancho Colina or CDCR at the CMC Site.

Comparative Site Analysis. The following discussion compares issues related to the City's likely role at either site, and its ability to achieve its stated goals with respect to the proposed WRF.

CMC Wastewater Site

CDCR staff have stated that if CMC is expanded to serve the City and Cayucos as well as its existing customers, CDCR would retain ownership of the treatment facility but offsite raw wastewater conveyance and brine discharge pipelines would be owned and operated by others, likely the City and CSD.

For a facility at the CMC site, the City Council and CSD Board will not be able to jointly set annual budgets, determine the schedule and approach for addressing maintenance needs and capital improvement projects, or generally control the budget and timing of activities at the plant. These will all be determined by CDCR if they retain ownership of the plant.

It is assumed the goals stated by the City related to energy recovery, biosolids reuse, and other important considerations could be incorporated into the plant design if there is no conflict with the existing plant process or with CDCR program objectives. However, the City will no longer direct the project other than design/construction of the force main and possibly the brine disposal pipeline.

In addition, CDCR has stated it would only operate the treatment facility itself, but that the construction, operation and maintenance of offsite reclamation infrastructure would be the responsibility of Morro Bay/CSD. This arrangement could lead to complex logistical issues related to the construction and



maintenance of the facility as a whole. It could also lead to conflicts among the agencies whenever there is a breakdown in the system, relative to shared responsibilities for addressing the issue.

Rancho Colina Site

The City jointly owns and operates the existing MBCSD WWTP with Cayucos Sanitary District under a Joint Powers Agreement. Because neither CDCR nor the County would be involved, it is assumed that a facility at the Rancho Colina site could have a similar framework or agreement between the two agencies.

The City Council would be able to set annual budgets, determine the schedule and approach for addressing maintenance needs and capital improvement projects, or generally control the budget and timing of activities at the plant.

In addition, the City would be able to develop a project that meets their stated goals for the WRF since they will be directing the planning, design, construction, and operation of the facility.

Summary and Conclusions. The following summarizes the major findings of the analysis related to this issue:

- The City would own a facility at Rancho Colina but would likely be a customer or non-majority partner at CMC.
- For a CDCR-owned facility at CMC, the City and/or CSD would still be responsible for constructing and maintaining pipeline infrastructure to and from the site. This complex arrangement could lead to conflict among the agencies relative to shared responsibilities in the event of a breakdown in the system.
- Developing a project at the Rancho Colina site would allow the City to direct the project and meet stated City goals. Participating in a regional CMC project will turn over control to CDCR and unless City objectives align with those of CDCR, those desired project elements may not necessarily be included.

K. Does either site have comparative advantage relative to securing possible funding (grants and loans) for a new regional reclamation facility?

Why This Issue is Important. The issue relates to the City's ability to minimize costs. It has been suggested that aspects of the project could qualify it for various grant or loan programs, and that there might be locational advantages to one site or another relative to securing potential funding.

Comparative Site Analysis. This issue was studied extensively in a report produced by Kestrel Consulting, and included in **Appendix F** of this report. The major results of the analysis that pertain to site selection are summarized below.



CMC Wastewater Site

A facility located at the CMC site might have different and potentially fewer uses for recycled water than one constructed at Rancho Colina, but greater potential for cost-sharing among regional partners, as well as expanded waste to energy systems. Until this Project is defined more clearly, it is difficult to assess grants that might be site-specific, and potentially comparatively more beneficial at this location.

Please refer to Sections 6.E., 6.F., and 6.H. for further discussion of issues related to project design and logistics. Also refer to Section 6.B. above for further discussion of cost-related issues.

Relative to potential funding, there does not appear to be any comparative advantage relative to securing potential funding (grants or loans) for a facility at this site, given what is known about the project at this time.

Rancho Colina Site

Generally speaking, a water reclamation facility at Rancho Colina could have a higher potential for uses of recycled water including groundwater recharge (storage). Proposition 1 includes a new competitive grant program for water storage projects. If the bond is approved, then this grant program is likely to have a preference for projects that reduce dependence on imported water.

An example of such a project would be if the City of Morro Bay proposed to inject and store highly-treated recycled water in the aquifer and pump it out at a later date in-lieu of State Water Project water. With such a project and a competitive grant proposal, it is reasonable to think that the state could contribute up to 25% of the cost of construction.

That said, as with the CMC site, there does not appear to be any comparative advantage relative to securing potential funding (grants or loans) for a facility at this site, given what is known about the project at this time.

Summary and Conclusions. Based on what is known about the project at this time, neither site appears to have a comparative advantage relative to securing potential funding (grants or loans) for a facility. In fact, it is generally important to have the project well-defined before making a major effort to secure grants and loans, because these programs are highly competitive, and agencies offering these programs are looking for projects that have the highest degree of success. However, Kestrel Consulting has provided insights and recommendations to maximize the City's ability to secure grants and/or loans, whichever site is chosen. These are as follows:

- Since either project can be tied into water supply benefits, both could pursue similar grant and loan programs.
- The Rancho Colina site could have a slight edge over the CMC Regional site since improving quality and supply of groundwater in the Morro Valley could address a disparity between existing safe yield and basin demands, reduce risk of seawater intrusion, and help export nutrients and salt from the Morro Valley groundwater basin.
- CDCR could have access to various state funding sources for the Regional CMC site.



However, since the plant upgrade would not address any agency priorities it is unlikely that they would assist with providing funds to upgrade the facility. Since the County would not take over the CMC WWTF, according to CDCR staff, County resources are not likely to be different than those that would be available to support a Rancho Colina site (e.g., coordination of Integrated Regional Water Management Plan-related funding).

7. Conclusions and Recommended Regional WRF Site

Table 6 summarizes the findings of the site analysis with respect to the key questions posed above. The table is color-coded to assist the reader in interpreting the results. Green areas indicates a comparative advantage for one site or the other, while orange indicates substantial constraint that may be difficult to overcome while still meeting the City's goals for the project.

Table 6. Summary of Comparative Site Analysis and Findings			
Key Issue	Site		
	CMC	Rancho Colina	Better Site
	Summary of Issues		
A. Unique Regional Benefits?			
Administrative	Combines multiple agencies in one location	- Multiple agencies served in two locations - Would remove existing outdated WWTP that serves nearby residential area, and replace it with new WRF, resulting in no net new facilities to permit.	CMC
Regional Water Supply and Distribution	About 1.5 miles from connection to regional water distribution network	About 1.5 miles from connection to regional water distribution network	similar
Economic	Water reclamation could benefit crops in Chorro Valley, but to a less extent than the comparative advantage of Rancho Colina relative to Morro Valley	Water reclamation could benefit more acreage of relatively higher value crops	Rancho Colina
B. Relative Cost to Construct and Operate?			
	TBD	TBD	TBD
C. Unique Water Supply Benefits?			
Groundwater Availability and Quality	Highest potential benefit during drought year (up to	Highest potential benefit during normal or wet	similar



Table 6. Summary of Comparative Site Analysis and Findings			
Key Issue	Site		
	CMC	Rancho Colina	Better Site
	950 AFY 26 parcels	- year (900 AFY) without CSD, and 1,125 AFY with CSD - Fewer effluent permitting challenges and lower regulatory risk related to discharge	
Streamflow Augmentation	Streamflow augmentation is assumed as major component of reclamation	If streamflow augmentation occurred, overall benefit would be similar to Chorro Creek	<i>similar</i>
D. Agricultural Reclamation Opportunities?			
Existing and Potential Acreage	673 acres of potential irrigated ag 26 parcels	1,094 acres of potential irrigated ag 56 parcels	<i>Rancho Colina</i>
Crop Type and Value	- Mostly mixed row crops - Moderate value	- Mostly avocados - High value	<i>Rancho Colina</i>
E. Regulatory or Logistical Constraints?			
Interagency Coordination and Timing	- Neither CDCR nor County indicate desire to lead - Could not be achieved in 5-year timeframe - CDCR not motivated to pursue - Would require multiple state agency approval to pursue (2 years to go/no go decision?) - Low priority for County - Multi-agency framework needed; complex negotiations - Has support of RWQCB Executive Officer, but Board position is unknown	- Privately-owned; motivated seller - No coordination with CDCR or County needed - Could be achieved in 5-year timeframe - CSD is potential partner, but Morro Bay could pursue site independently	<i>Rancho Colina</i>
Water Rights	- Requires permitting to obtain water rights at City wellfields - Requires multi-agency agreements among all the customers discharging to the CMC WWTF - Risks creating or enhancing habitat and reducing ability to use recycled water for other applications in the future similar to City of SLO.	- Requires permitting to obtain water rights and City wellfields - Requires agreements with customers to reduce their pumping	<i>similar</i>
Streamflow Discharge Requirements and Limits	Difficult to meet water quality goals in TMDL	- No TMDL standards - No minimum flow	<i>Rancho Colina</i>



Table 6. Summary of Comparative Site Analysis and Findings			
Key Issue	Site		
	CMC	Rancho Colina	Better Site
	Must meet minimum flow requirements	requirements on Morro Creek	
Caltrans Encroachment	Encroachment Permit for pipeline potentially avoidable	Encroachment Permit along Highway 41 needed for pipeline	CMC
Environmental and Other Agency Permitting	Multiple studies and permits needed	Multiple studies and permits needed	similar
F. Site Constraints that Affect Design?			
Site Configuration/Existing Development	TBD	TBD	TBD
Environmental Constraints	TBD	TBD	TBD
G. Coastal Environmental Issues?			
Coastal Proximity and Access	4.7 miles to estuary; 6.5 miles to ocean. Will not affect coastal access	1.7 miles to ocean. Will not affect coastal access	similar
Visual Impacts	Not visible from coast; distant view from Highway 1	Not visible from coast; brief view from Highway 41	similar
Biological Resources/ESHA	- ESHA near Chorro Creek, potentially avoidable - Red-legged frog, tidewater goby and steelhead in Chorro Creek	- ESHA near Morro Creek, avoidable - Red-legged frog, tidewater goby and steelhead in Morro Creek	similar
Cultural Resources	Site disturbed; potential for unknown resources exists	- Site disturbed; potential for unknown resources exists - Large site (CA-SLO-165) near SR 41/1 intersection could be impacted by pipeline	CMC
Agriculture	All developable area property underlain by prime soils	No prime soils in most developable area; some potentially prime soils near Highway 41	Rancho Colina
Minimize Carbon Footprint	Longer pipeline distance suggests higher energy use and thus GHG emissions	Shorter pipeline distance suggests lower energy use and thus GHG emissions	Rancho Colina
H. Design Limitations?			
Discharge Limitations that affect design	Permitting challenges related to discharge limitations will adversely affect cost	If direct reuse of water and wet weather disposal used, there would be fewer permitting challenges leading to lower costs; recycled water program is a critical path item	Rancho Colina
Other Considerations	Morro Bay NEP and other agencies will need consultation relative to impacts to estuary	No national estuary reduces potential permitting and consultation challenges related to meeting water	Rancho Colina



Table 6. Summary of Comparative Site Analysis and Findings			
Key Issue	Site		
	CMC	Rancho Colina	Better Site
		quality standards	
I. Is 5-Year Goal Achievable?			
Logistical Constraints	- Neither CDCR nor County indicate desire to lead - Would require multiple state agency approval to pursue (2 years to go/no go decision?) - Could not be achieved in 5-year timeframe	- Privately-owned; motivated seller - No coordination with CDCR or County needed - Could be achieved in 5-year timeframe	Rancho Colina
Permitting/Regulatory Constraints	Multiple studies and regulatory permits needed	Multiple studies and regulatory permits needed	similar
Cost/Funding Constraints	TBD	TBD	TBD
J. City's Role in Operating facility?			
Treatment Facility	Owned by CDCR; City would be customer	Owned and operated by City	see below
Offsite Pipeline Network	Owned and operated by City	Owned and operated by City	see below
Logistical Issues	- CDCR control would make realization of City goals difficult - Split ownership of treatment facility and pipelines could lead to conflict among agencies	- City control would make realization of City goals possible - Unified City ownership of entire reclamation system reduces operation and maintenance difficulties	Rancho Colina
K. Comparative Funding Advantages?			
Grants and Loans	There are currently no identified site-specific advantages for securing funding at this location.	There are currently no identified site-specific advantages for securing funding at this location.	similar
Other Considerations	- A well-defined project at any location will be more competitive for funding. - Projects that solve nitrate problems will be more competitive.	- A well-defined project at any location will be more competitive for funding. - Projects that solve nitrate problems will be more competitive.	similar
OVERALL			Rancho Colina

While both sites are potentially suitable for a new regional WRF, the **Rancho Colina** site is considered better overall. Key considerations in this determination include:

- Long-term benefits of water reuse in Morro Valley exceed those in the Chorro Valley for the following reasons:
 - Siting in the Morro Valley provides an opportunity to optimize reuse of State Water to



restore a severely depleted groundwater basin that already experience agricultural demands that exceed the basin's safe yield (Cleath, 2014);

- The City can likely improve the reliability of its existing appropriated water right and acquire additional water rights based on the reclaimed water used to recharge the basin;
- Once the basin is restored and operated in a sustainable fashion, the City gains the ability to reduce its reliability on State Water and use a less expensive water supply to significantly reduce water costs to rate payers;
- The Rancho Colina site is much closer to both the existing Morro Bay Desalination Plant and the Ocean Outfall, both of which provide vital infrastructure support to direct agricultural and future potable water reuse;
- The Rancho Colina site and City water distribution system are within 2 miles of both the Whale Rock and Chorro Valley Turnout, thereby enabling broader distribution of reclaimed or potable City water throughout San Luis Obispo County. The CMC WWTP is a similar distance from both pipelines, so that site does not have an advantage relative to proximity to major water conveyance facilities.
- Recharge of the Morro Valley aquifer provides three secondary benefits by:
 - Reducing the risk of seawater intrusion into the City well fields (Cleath, 2014)
 - Increased pumping which could remediate existing nitrate contamination in the basin because of the unique hydrogeographic conditions at "the Narrows" (Nitrate Study, Cleath, 2014)
 - Direct or indirect groundwater recharge of the aquifer through either percolation ponds or stream discharge which could potentially enhance aquatic habitat in both Morro and Little Morro Creeks
- The City's 5-Year Goal is not achievable at the CMC site, for the following reasons:
 - Neither CDCR nor the County appear likely to make expansion of the WRF facility at CMC a priority in their 5-year capital improvement program;
 - Pursuit of a regional facility at CMC would require extensive study and multiple state agency approvals, which may take at least a year or longer to even determine feasibility. If the State denies the project concept, the City would need to pursue a different site.
 - A multi-agency framework for operation, maintenance, cost-sharing, and water rights would need to be developed at CMC, which would take considerable time.
- Rancho Colina has highly motivated private property owner, willing to work with the City, and there are no agency-related constraints to transferring ownership or operation to the City, which will save considerable time. Conversely, the CMC site is currently encumbered by an existing State Bond, which could significantly complicate property transfer/acquisition.



- **COST CONCLUSIONS TO BE DETERMINED PENDING COMPLETION OF CAROLLO REPORT**
- The City will have more flexibility at a “greenfield”, or undeveloped, site to pursue innovative treatment approaches, energy-efficient technologies or alternative energy elements such as solar panels, composting, and other City priorities identified during the public workshops in 2013, rather than if they are a partner in the expansion of the existing CMC plant.
- Although a new WRF at CMC could improve the City’s water supply from its wells Chorro Valley wells, the City would also benefit from a WRF in the Morro Valley indirectly by creating an additional water supply that could benefit growers in the Morro Valley and improve the utility of the City’s wells in that valley. In addition, some of the City’s theoretical water supply gain in the Chorro Valley from a CMC site could be offset by minimum streamflow requirements in Chorro Creek, or complications related to achieving water quality goals in that basin.

Table 7 below summarizes the conclusions from the water resources-specific studies performed for each site, relative to cost, potential water supply benefit, and permitting. For the Rancho Colina site, the table considers two possibilities: that CSD may or may not participate in a new WRF at that location.

Table 7. Comparison of Water Resources-Specific Conclusions			
	CMC Wastewater Site	Rancho Colina (City Only)	Rancho Colina (City + CSD)
Design Flows for City/CSD	Additional 1.5 MGD (1,680 AFY)	1.13 MGD (1,270 AFY)	1.5 MGD (1,680 AFY)
Discharge Permitting	Highest regulatory risk due to location upstream of Morro Bay National Marine Sanctuary; listing of Chorro Creek as an impaired water body under the Clean Water Act; TN and TDS limits; and potential future nutrient policies. Mandatory minimum penalties are assigned to effluent exceedances (typically \$3,000 per violation or \$10,000 per day)	Opportunities include a range of permitting options such as use of the existing ocean outfall for wet weather flows, direct agricultural reuse within 3 miles of the plant, potential percolation, and stream augmentation. All vary in level of complexity but have less effluent limitations than CMC Regional Site.	Same as City Only
Water Supply Benefit	900 AFY during drought years 510 AFY during normal/wet years	320 AFY during drought years 900 AFY during normal/wet years	545 AFY during drought years 1,125 AFY during normal/wet years
WRF Capital Cost	TBD	TBD	TBD
Annual Treatment Facility O&M Cost	\$\$ Total \$\$ for MB/CSD		
Relative Cost for Wastewater Reclamation	TBD	TBD	TBD
Relative Cost for Water Supply Benefit (\$/AFY)	TBD	TBD	TBD



8. References and Report Preparers

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References for this study also include links to articles, newsletters, studies, and other documents imbedded into many of the above documents, websites, and correspondence submitted through the process.

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Appendix A

Letter from San Luis Obispo County to CDCR
October 29, 2013

Appendix B

Capacity Evaluation of the CMC Wastewater Plant
Carollo Engineers, November 2014

Appendix C

Hydrologic Evaluation of Chorro Valley and Morro Valley
Cleath-Harris Geologists, October 2014

Appendix D

Water Supply Cost Analysis
MKN and Associates

Appendix E

Regulatory Implications for Discharge
Larry Walker Associates, September 2014

Appendix F

Initial Findings on Grants and Strategy
Kestrel Consulting, September 2014